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# SOME RECENT IMPROVEMENTS IN SURGICAL TECHNIQUE.

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*Read before the Sacramento Society for Medical Improvement.*

The intense activity which has prevailed throughout the realm of surgery in these later years has resulted in what seems a positive demonstration of requirement on the one hand, and of perfection of method on the other. In the process of time, exaction has been added to exaction until the list has become truly formidable, and the standard of surgical excellence is to-day so high that many careful, painstaking persons have been led seriously to doubt the possibility of adequately meeting the former or of fully realizing the latter.

It may be asserted with a considerable degree of positiveness, that as concerns fundamental knowledge, adeptness in the interpretation and application of general principles and in the exercise of ingenuity, many modern surgeons are in every sense masters. The rapid strides in surgical science of the past decade have left no field unoccupied, every organ has been dealt with successfully by original methods, and every hour has given birth to some new achievement.

Faith in surgical prophylaxis was raised to the highest pitch, and for a time no one seemed to question the correctness of Sir Joseph Lister's dictum, that it is now possible to offer to the patient absolute immunity from the risks of infection. These words were publicly uttered nearly twenty years ago. Since then we have been taught and have taught that an originally clean wound, under the magic hand of the modern surgeon, must remain free from infection during the process of repair; that the presence of pus in such relation, be its consequences serious or otherwise, is an opprobrium; and that failure to guard against such an exigency must subject the operator to humiliation and to an arraignment before the bar of conscience.

Nevertheless, from near and from far—from the lips of the acknowledged law givers of surgical art not less than from their humble disciples, from institutions of learning, with their unbounded facilities for research and experimentation, with their wealth of clinical material, with an ideal environment and all their magnificence of construction—there has recently come a note of warning, which unmistakably carries with it the suggestion of a confession. There seems to have been a striking similarity in the experiences of many surgeons. Not so very infrequently it has happened that wounds, which were expected to heal rapidly and without complication, became unaccountably infected. Now and then a series of several wound infections, under the same personal equation and surroundings, would occur in a manner both provoking and inexplicable.

The degree and character of such infections is variable. Occasionally the invasion manifests itself through an early rise of temperature, immediate separation of wound edges, and an early purulent discharge. More often the announcement comes through a very gradual rise of temperature, beginning at the fifth to the eighth day, accompanied by a resistant feeling at the seat of the wound, whose edges are perfectly united *per primam*. This condition is followed in two or three days by the pointing of an abscess and the discharge of pus in greater or less amount. Though such occurrences are rarely serious in their consequences, it will be readily seen that the aggregate of suffering is greatly augmented, and ultimate recovery is delayed to a marked extent. No surgeon, who is in sympathy with the spirit of this age, can encounter even a single case of this sort complacently; nor can he escape the conviction that, because of some sin of omission or commission, he must assume the responsibility.

To overcome the difficulties alluded to in the foregoing, several measures have recently been adopted, which are as yet not sufficiently well recognized to insure their general adoption. There can be little doubt that absence of efficient wound drainage often interrupts, if it does not totally inhibit, repair. Although this principle has been well understood for many years, it has been observed that the presence of most drains have proven so objectionable as to render their use a matter of grave question. Recently the employment of a strip of elastic rubber tissue has presented advantages far beyond those previously used. At points of emergence of this drain the tissue is crimped between stitches, thereby affording an admirable means of escape for pent up fluids. For coarser work, where a large drain is required, I have recently constructed an affair which answers an admirable purpose by cutting from a large rubber tube a longitudinal segment, amounting to about one-quarter the diameter of the tube. Such a tube comes nearer performing its office perfectly than any other I have ever seen.

There is a general agreement among frequent operators that the former method of attaching sutures is faulty in the extreme. It has been and still is, in certain quarters, customary to include in the suture line a half inch or more of integument. The suture is then drawn tightly, the underlying skin being pinched and partly strangulated. Such a state of affairs has seemed to me to be unsurgical and highly improper. To obviate this fault I have for a long time been in the habit of uniting skin wounds by what I term the rim or marginal suture. Underlying tissues having been carefully united by the tier method I join the integument by a continuous suture which includes but a small fraction of an inch on either side of the line of incision. Such a suture is very superficial and its insertion is rarely ever attended with a perceptible hemorrhage. I regard this procedure as greatly superior to the former method, in that it affords absolutely accurate apposition of the skin edges, and if loosely drawn avoids the highly objectionable feature of tension. Moreover, the cicatrix with such treatment is a linear affair and is far less noticeable than under the old plan.

The adoption of silver foil, introduced nearly ten years ago by Halstead as a wound dressing, has, in my hands, proven extremely satisfactory. It is claimed for silver foil, that it possesses a peculiar power of inhibiting the production of germ life more positively than any other known substance. It forms a perfectly clean, dry, non-irritating shield which should be covered by numerous layers of unmedicated dry sterilized gauze. I have employed this dressing for the past four months systematically, and am thoroughly convinced that under no other treatment have wounds healed as rapidly and with so few embarassing interruptions. During this period I have discarded all other chemical agents as iodoform and other antiseptic powders. In no single instance has the metallic silver provoked the slightest skin irritation and much more rarely have I met with wound infection than under the former regime. The material employed is the ordinary silver foil of commerce, such as is used by glaziers. It should be subjected to a temperature of 300° F. for purposes of sterilization. A considerable amount of dexterity, necessary in its application, will be acquired with experience.

Dr. Chas McBurney, of New York, in the July number of the *Annals of Surgery* has recorded at length his experience with rubber gloves in operative surgery. In the course of this discussion the matter of hand sterilization, with all its difficulties, is gone into at great length, and it is shown very conclusively that under any and all methods this measure can only be accomplished in a most imperfect and unsatisfactory manner. He maintains, furthermore, that wound infection more often proceeds from the hands of the surgeon and his assistants than from any other source. Accepting the truth of this statement the advisability of protecting the patient from such a danger need not be discussed. The objections ordinarily raised are: (1) That they interfere with manual dexterity. (2) That they lesson tactile sensibility. Neither of these considerations is worthy of special comment. After a few experiences with gloves, the surgeon operates nearly as rapidly and with as great dexterity as with the naked hand. Speaking from personal experience, I do not believe that my patients have suffered by any interference with the sense of touch.

Although it is, apparently, not necessary to sterilize the hands by any of the approved methods when the gloves are used, it certainly is a wise precaution to do so, as there is always a liability to destruction of the gloves during a critical period of the operation. The gloves should be worn by the operator, and by two or more assistants, in fact by all who are immediately interested in the undertaking. Before the gloves are brought into requisition they should be boiled from ten to fifteen minutes and during this process they should be filled with the boiling fluid. Such treatment insures an absolutely aseptic covering for the hands. With such a safeguard the hands of the surgeon, though positively infectious, may be rendered safe so far as the interests of the patient are concerned.

The question will be asked, Should rubber gloves be used in infected or pus cases? To this I answer, unreservedly, yes. In the first place we may have an infection of a simple character which is very liable to become complicated by multiple infections through the surgeon's or assistants' hands. Again, the gloves should be used for the purpose of protecting the surgeon's hands and nails from the obnoxious condition which is entailed by direct contact with purulent discharges. I venture to say that after a very few experiences with the gloves under the above conditions no one will question the propriety of their continual use. Already I have come to feel that the idea of bringing my naked hand, however clean it may seem to be, into contact with a clean wound, is extremely distasteful, and the very thought of soiling my hands with foul discharges is simply abhorrent.

McBurney maintains that since he began the use of rubber gloves in septic cases, such as appendix abscesses, these cases have seemed to heal in a much more perfect manner than usual. In commenting upon the advantages of operating under glove protection, McBurney states that for five months he and his assistants wore rubber gloves at every operation of every kind. As is well known, his service is one of great activity. His work included operations in large variety, such as for gall stones, hernias, nephrectomies, breast amputations, thyroidectomies, amputations, resections, appendectomies and intestinal complications. All cases operated upon during that period, both in hospital and private practice, healed perfectly, without the slightest evidence of infection, save in five instances. These latter were all unimportant and hardly worthy of mention. It must be conceded that this record is well-nigh ideal, and only to be hoped for under conditions that are as nearly perfect as we can expect to make them.

My own experience with the gloves has been equally satisfactory, in a very small way. During the past six weeks I have operated under gloves in all uninfected cases. During this time my list of operations comprises one extensive scalp wound, one comminuted fracture of the leg near the ankle, three operations for radical cure of hernia, seven laparotomies, the latter being five appendectomies, one intussusception of bowel and one ovariotomy. Twelve of these cases are now well. The ovariotomy was done four days ago and is still incomplete. The appearances are, however, that the wound will heal without any interruption. Aside from this, all the other cases have healed in an ideal manner, excepting one of the appendectomies. In this, no effort at drainage was made, and there was a discharge of fluid from the lower angle of the wound on the fourth day, attended with a slight rise of temperature. The five appendectomies were all well on the fourteenth day, and two of them as early as the ninth. The compound fracture has gone on in a satisfactory manner, and union will have taken place in about the time occupied by the healing of an ordinary closed fracture. The thigh amputation at the end of the fifth day was perfectly healed *per primam*. The temperature in this case has rarely risen above 99° at any time, and is at the normal point most of the time.

The case of bowel obstruction is even more noteworthy. On opening the cavity I found it tolerably well filled with dark colored suspicious looking fluid. The invaginated portion was readily found and reduced. The appearance of the bowel at this time was such as to make me solicitous regarding its integrity, but after mature deliberation it was replaced. The cavity was then carefully sponged out and the wound closed. There was never a rise of temperature above 99°, and the woman returned to her home on the fifteenth day. I regard this as an extremely valuable test case in this connection, for I am tolerably certain that the abdominal contents were in a state such as to afford a most excellent culture medium for germ infection. I am by no means certain that had this operation been done with the naked hands we should have been able to record so fortunate a result.

In conclusion, I shall only add that I do not now recall a series of cases in my own practice where the condition of the patient as regards temperature, rapid wound healing and general comfort, has been so uniformly satisfactory as in the foregoing, and I cannot

**escape the conviction that in the near future the rubber gloves will become an essential feature of the surgeon's armamentarium.**

**428½ J street.**

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## THE TEMPERATURE IN ENTERIC FEVER.

By WALLACE A. BRIGGS, M.D., Sacramento, Cal.

*Read before the Sacramento Society for Medical Improvement.*

The term "typhoid," as indicating a specific fever, has survived its usefulness. Associated as it is with various conditions of extreme debility, it has come, as a general term, to connote so much more than, as a specific term, it can possibly denote, that, not only in the lay, but also in the professional mind, it often gives rise to the utmost confusion. Recently a physician said to me, "these cases are not typhoid; the tongue is not dry, there are no delirium, no *subsultus tendinum*, no diarrhea, no intestinal hemorrhage—in fact, there is nothing typhoid about them." Substantially the same remark I have heard repeatedly during the last twenty years, and often from physicians of experience.

In a general, but not in a specific sense, this remark is correct. The truth is that by modern methods of treatment, and possibly in part by natural selection and partial hereditary immunization, enteric fever is no longer, or at least very rarely, "typhoid." For these reasons, the term "enteric," as designative of a specific fever, although by no means entirely free from objection and probably not definitive, would seem preferable to the expression "typhoid." I have, therefore, employed it in the title of this paper.

That high temperature is the most important symptom of enteric fever, the symptom causing the greatest mortality, is demonstrated by the Brand method of treatment and its various modifications. But successfully to introduce the Brand method into private practice implies an authority not inherent in the medical profession at large. Its seeming brutality, and the dread, particularly of young and nervous patients, practically restrict it to the hospital. The Brand method has other inconveniences--it requires a nurse of special training and of rare judgment and authority, demands cumbersome apparatus, and entails great labor, and disturbance of the patient. Recognizing the service it has rendered, and, indeed, is still rendering, I am yet fully convinced that it should be superseded, not only in private, but also in hospital practice, by other means at once less cumbrous, less fatiguing, more effectual and more humane.

These means consist of Leiter's coils, the ice bath, ice water enemeta, sponge bathing, evaporating lotions and the chemical antipyretics—preferably, in my observation, phenacetine.

Besides these direct means of temperature reduction there are certain preventive measures equally important, perhaps, if not so strikingly influential. First among these is quietude of body and mind. Every physician of experience has observed the untoward influence of excitement and exertion on febrile temperature. The following case may be cited in illustration:

Mrs. B——, in the beginning of the second week of a severe enteric fever. With phenacetine and a large coil the temperature had been kept below 101° for several days. At 8 P.M., February 15, 1898, I found her with the coil removed and a temperature of 102°. In accounting for the removal of the coil the patient said that her mother, who was somewhat of a nurse, had, that evening, insisted that she had no fever and that the coil would suppress her menstruation. My powers of inhibition being momentarily in abeyance, I replied sharply that such interference was intolerable and that unless given absolute control I would abandon her case at once. The patient was considerably agitated and notwithstanding the return of the coil her next morning and evening temperatures were 103° and 104° respectively. It was not until the third day that the temperature resumed its normal course. This febrile storm was undoubtedly due to mental perturbation; it might have been averted by a tactful physician or controlled by a skilful nurse.

The discomforts of a protracted illness should be anticipated and relieved; visitors should be absolutely excluded; the room should be darkened and quiet; and the utmost quietude of both mind and body should be maintained from first to last.

Of preventive measures, the next in order is an aseptic condition of the alimentary canal, to be established and maintained not so much by the various intestinal antiseptics as by careful regulation of diet, digestion and bowel movements. The toxins and ptomaines generated in the intestinal canal by Eberth's bacillus and the bacteria of putrefaction are the chief causes of febrile temperature in the course of enteric fever. Their production may be materially diminished by strict supervision of the digestive process. The maintenance of a normal, or a nearly normal temperature, will contribute greatly to this end.

In neglected cases improvement in the appearance of the tongue and in the powers of digestion and assimilation is one of the most noteworthy results observed after efficient refrigeration, and, in those cases treated properly from the first, there is very rarely any serious disturbance of the digestive functions. From this and other evidence, which at this time it is unnecessary to consider, we may fairly conclude that high temperature, in and of itself, impairs digestion, and predisposes to fermentation and putrefaction of the gastro-intestinal contents. *Refrigeration*, therefore, *not only disperses* heat, *but also hinders its production*.

An aseptic condition of the alimentary canal is incompatible with unsuitable foods, in unsuitable quantities, at unsuitable intervals. Milk, pure or diluted, whole or skimmed, hot or cold, alkalized or peptonized, or otherwise adapted to the condition of the digestive organs, is the ideal food in enteric fever. To this may be ordinarily added gruels, toast, crust of bread, light custards and various fruit juices. In case of indigestion, whether gastric or intestinal, the cause should be sought out and remedied without delay. If the passages be loose and fermented, tannigen or tanalbin by the mouth, or tannin solutions by the rectum, often serve an excellent purpose, not only by checking the looseness and fermentation, but also by precipitating the toxins and thus hindering their absorption.

The question of persistent catharsis is possibly an open one. If there be anything in the Woodbridge treatment it would seem, in my opinion, to be chiefly the promotion of an aseptic condition of the alimentary canal by constant drainage—by constantly sweeping bacteria and their products out of the intestines and giving the glands and mucosa a better chance to cast off infection.

Of preventive measures, an active renal function, by which ptomaines and toxins are rapidly excreted, is of the utmost importance. Retention of these substances, besides being profoundly deleterious in many other ways, is the chief cause of high temperature. Here, also, the coil, ice bath and phenacetine are prophylactic. By checking perspiration and raising blood pressure the coil and ice bath, exercise a powerful diuretic action which is, perhaps, increased by phenacetine. Liquids must be given freely, varying in quantity from 2½ to 5 quarts a day. If this quantity overtax the stomach it should be given partly by the rectum, or even subcutaneously. Carbonated alkaline mineral waters, the juices of oranges, watermelons and ripe sweet grapes, such as the muscat and sweetwater, are often grateful to the patient and at the same time are strongly diuretic.

By these means the daily quantity of urine may and should be kept at or above 50 ounces. I have often seen it reach 80 and occasionally 100 ounces. In this way toxic products may be eliminated as they are formed and will thus cease to be factors in high temperature as well as in the "typhoid condition" generally.

In the prevention of high temperature a normal tone of the nervous system is not to be overlooked. In the later stage of enteric fever, and in marked toxemic conditions generally, the control of the heat center is markedly enfeebled, and, in agony, it is nearly, if not quite, lost. The weaker the nervous system the less vigorous its function, is a truism neglected or forgotten in its application to the apparatus of heat control.

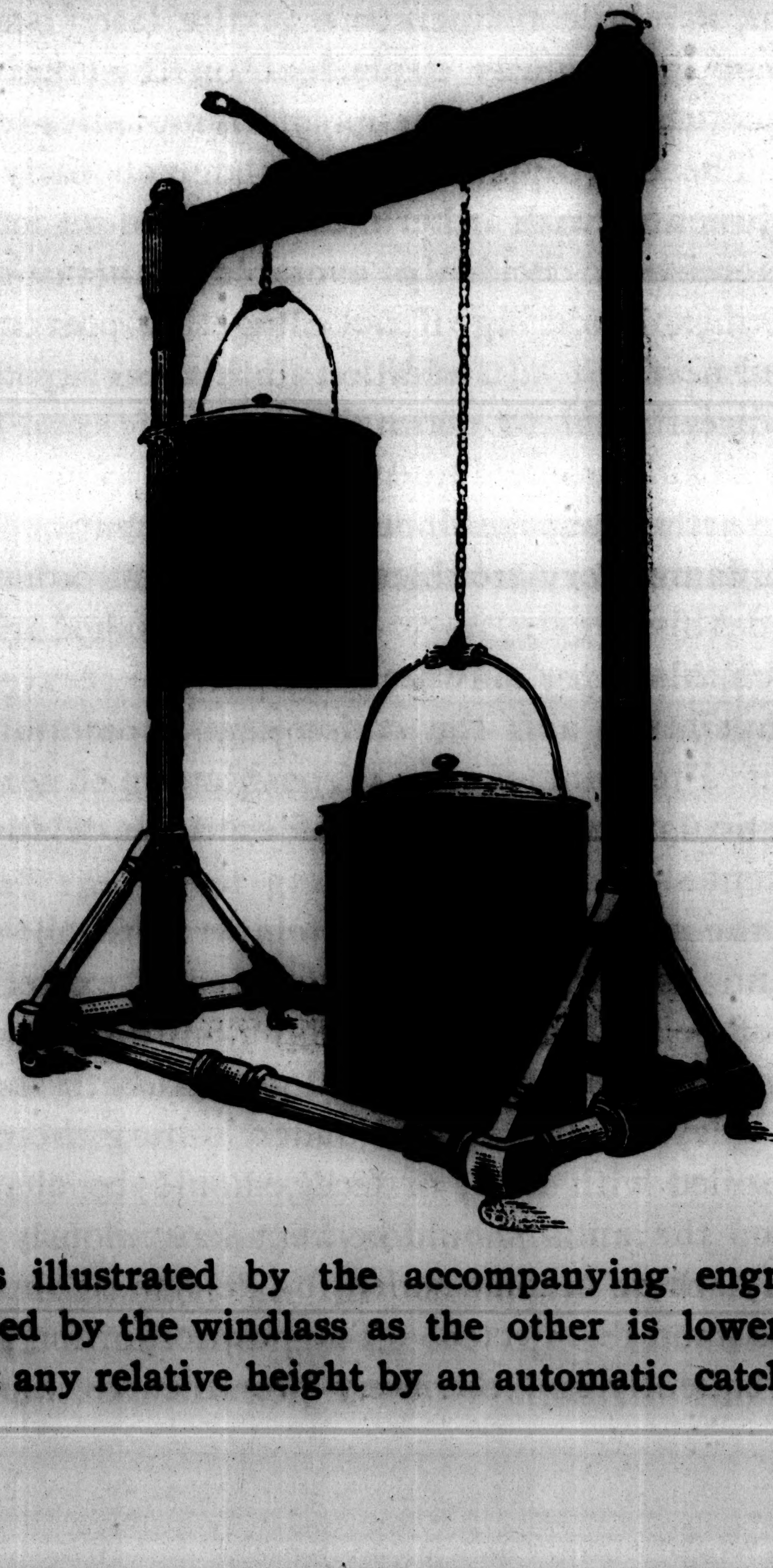
The tone of the nervous system as a whole, including the heat center, is to be maintained by the direct and the prophylactic influence of refrigeration, by promotion of nutrition, by perfect rest, and finally by nerve stimulants and tonics.

In the prophylaxis of high temperature something may be done by preventing or moderating inflammation, necrosis and ulceration of the intestinal glands. For not only do these tissues, weakened by inflammation, afford a better nidus for Eberth's and other bacilli than do the normal tissues, but the denuded and ulcerated surfaces also afford a better gateway for septic as well as typhoid infection. Exacerbations of febrile temperature in the latter stages of enteric fever seem not infrequently dependent on the entrance of various toxic substances through open veins and lymphatics into the general circulation. The coil, applied to the abdomen early and continuously, in conjunction with other measures here set forth, I am fully convinced, exercises a decidedly avorable influence on the infected abdominal tissues, hindering, if not altogether preventing, their degeneration and necrosis. In addition to this, perhaps all that can be done in this direction is to maintain an aseptic condition of the intestinal canal and to promote nutrition.

Something further may be done in the prevention of pyrexia by forestalling inflammatory troubles of the chest, whether active or passive. And this, again, is to be accomplished chiefly by the means to which this paper may seem eternally to recur—by reduction of febrile temperature and the consequent promotion of excretion and nutrition. Frequent change of position must not be neglected, of course, particularly in conditions of extreme debility and threatened or incipient stasis.

Finally, in the prevention of high temperature, the skin must be kept clean and aseptic, for the resorption of excretions and the development of boils and bed sores play no insignificant part in the pyrexia of enteric fever. A thorough general bath should be given once or twice a day. The bed and underclothing should be changed daily and, if soiled with urine or feces, should be changed *at once*. The parts about the anus should be kept scrupulously clean, and, if the surface any where become soiled, by dejecta, it should be immediately cleansed and disinfected. The position of the patient should be changed frequently and the bony prominences, especially of the sacrum and trochanters, should be kept healthy by cleanliness, frequent gentle friction, stimulant and antiseptic washes and the air cushion.

Of the direct means of temperature reduction, Leiter's coil is not sufficiently appreciated by the medical profession. To Dr. T. W. Huntington, of this city, belongs the credit, I believe, of its adoption in the treatment of enteric fever. Supplemented by the lift, to be described later in the course of this paper, it is a convenient, effective, indeed, an indispensable means of refrigeration. The coils ordinarily found in the shops, however, are not of the right form and are not large enough (*i. e.* do not cover sufficient surface) to be effective, at least in the adult. They should be elliptical in shape and should cover the whole front of the body from one midaxillary line to the other and from the clavicle to the pubes.



The lift is illustrated by the accompanying engraving. One bucket is raised by the windlass as the other is lowered and then may be set at any relative height by an automatic catch.

Children have a relatively larger heat dispersing area than adults, which, however, is partly offset by the greater instability of their heat center. Coils may, therefore, be comparatively somewhat smaller for children, but not to the full extent indicated by the proportion between the heat dispersing and the heat producing areas of children and adults respectively. It is better in both cases, however, to use a large coil and to regulate refrigeration by the temperature of the water and the rapidity of its flow. Such coils are thus adapted to any condition that may arise. The hose should be of good quality, of light weight, and $\frac{3}{16}$ to $\frac{1}{4}$ inch in caliber. The buckets should be large (10 gals. in capacity) and of paper, with cover and provided with overflow attachment for coils.

At the first suspicion of enteric fever the patient should be put abed with a Leiter's coil to the chest and abdomen. The temperature and flow of the water should be so regulated as to keep the body temperature certainly below 102°, and, if possible, as it usually is, below 101°.

The ice bath is an admirable adjunct to the coil and should be given whenever (notwithstanding the coil) the body temperature reaches 102°. To administer it the coils are removed, the patient is turned on the side; thighs, back, chest and abdomen are bared and rubbed thoroughly with ice until the temperature, either by mouth or rectum, is reduced to 100°. During this process the body temperature should be taken every fifteen minutes in order to prevent subnormal reduction. The ice bath is less unpleasant to the patient, more easily administered and more efficient even than the cold water bath. In hyperthermia of whatever origin, in both adults and children, I have used it with excellent results.

If, for any reason, the ice be objectionable, ice water injections may be used with great if not with equal advantage—a pint of ice water, if retained, abstracting about a half degree of heat from a person of 140 pounds. Such an injection may be introduced either by the rectal tube or by a No. 16 or 18 catheter, drawn off in fifteen or twenty minutes, and repeated once or twice, or even three or four times if necessary. The rectal tube should be left *in situ*, and not more than a quart of water should be permitted to accumulate in the colon.

Cold sponge baths and evaporating lotions are minor adjuncts to the coil and occasionally suffice, particularly in children, when the upward range of temperature is slight, but when it is high they are wholly inadequate.

I am quite well aware that in extolling the "chemical" antipyretics in the treatment of enteric fever I shall excite a smile among my friends of incredulity, among strangers, perhaps of derision. But to do otherwise I should be derelict to the duty imposed by a not inconsiderable and, I believe, a not wholly misguided experience.

In the year 1888 I began the use of phenacetine in the treatment of enteric fever—tentatively, at first, as with a powerful and comparatively untried remedy, and especially so because of the untoward and even fatal results frequently reported in the medical press at that time from the use of its congener, antipyrine. Not for some time did I exceed three 10-grain doses daily. Later the stereotyped directions were those of a great many other physicians—a powder when the temperature rises above 103°. The inconveniences of phenacetine by this method were soon manifest—profuse sweating with a falling and a severe chill with a rising temperature; but these were borne with as the choice of evils, until I discovered that under its full and equable influence these untoward effects were almost entirely obviated.

In November, 1893, convinced by long and painstaking observation that with my typhoid patients phenacetine had afforded results in every way better than those of any previous treatment, I began its systematic use from every two to every four hours to keep the temperature below 100° F., supplemented at first with cold bathing, and later with Leiter's coil and ice baths. The advantages of the coil were so evident that as a refrigerant it soon as a routine measure entirely displaced the cold bathing.

By these means, intelligently and faithfully applied, the temperature in any case of enteric fever may be kept practically normal during the entire course of the disease. Such a result, of course, presupposes a very nice adjustment of means to an end. That this adjustment, however, is entirely within the powers of a conscientious nurse of ordinary intelligence is an every-day observation not only of myself but of others who have adopted similar methods of refrigeration.

In this way I have now treated 100 cases of enteric fever with two deaths. Both of these cases died under digitalis—whether *post hoc* or *propter hoc* I have never been quite certain. From such limited "statistics" it may be folly to draw even provisional conclusions. But while in their present form, to the profession these cases are much less than "statistics," to me they are much more. These cases, every one, have been watched and, I think it not too much to say, observed with the care imperative in cases submitted to tentative measures, especially tentative measures generally condemned not only by the profession at large but also by those who are rightly regarded as authorities. They are to me statistics incarnate, and from them I feel warranted in drawing several conclusions, partly positive and partly provisional:

Under the full and equable antipyretic influence of phenacetine, conjoined with Leiter's coil and other means of refrigeration, previously described, and the dietetic and hygienic measures here set forth, instituted early and maintained throughout: (*a*) the temperature may be kept practically normal for the greater part of the 24 hours, during the entire course of enteric fever; (*b*) excessive sweating almost never, and chill rarely occurs; (*c*) appetite, digestion and nutrition are promoted; (*d*) renal secretion is ordinarily increased, sometimes conspicuously; (*e*) delirium rarely if ever occurs; (*f*) the heart's action is maintained; (*g*) the patient's comfort is greatly promoted; (*h*) the patient is in better condition for rapid and perfect convalescence; (*i*) complications and sequelæ are largely prevented; (*j*) mortality is materially reduced.

212 J street.

## THE EFFECT OF CARBONIC ACID WATER ON DIGESTION.

By A. W. Perry, M. D., San Francisco, Cal.

*Read before the San Francisco Medico-Chirurgical Society.*

The use of water charged with $CO^2$ at meals is, of course, very ancient, but in recent times it is large and constantly increasing, even with the poorer classes. Its use is thus not a mere fad, but is based on good reasons, some of which I will endeavor to demonstrate on a scientific basis.

The pylorus is normally closed, and opens by reflex action when food or drink is received into the stomach, which makes an agreeable or suitable stimulus on the gastric lining. The most favorable conditions for the quick passage of the stomach contents into the intestines in health are a temperature about 100° F., a slightly alkaline reaction, or a slight acidity due to hydrochloric acid (free and in organic combination) of less than .15 of 1 per cent.—freedom from lactic, acetic and butyric acids, and acrid and solid substances generally.

When a mixed meal of solids and fluids is taken, it remains in the stomach for about ten minutes, then the pylorus opens and allows a little gush of liquid to pass into the duodenum. This is repeated every five or ten minutes during the period of digestion until the stomach is empty. This has been demonstrated on a patient in France, afflicted with a duodenal fistula.[1] It also can be shown by auscultating the pyloric end of the stomach, when a spirting sound will be heard every few minutes.

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[1] Van Valzah, p. 76.

The habit of drinking cold water at meals is a bad one at all times, and can only be done for a long time by vigorous children with impunity. There is something in our civilization which has developed this habit, and the use of carbonic acid water is a sort of a safeguard against its evil effects, which our civilization has also evolved as a tolerable remedy.

I may remark here that fast eating and consequent deficient insalivation of food, a fault which American habits have produced, have also evolved a corresponding remedy—gum chewing—which produces a supplemental insalivation of food in the stomach.

Among the earliest common abnormal conditions of the stomach is a too prolonged stay of food in process of digestion. The inconvenience is so slight that it may not be remarked by the subject for years, but it has a constant tendency to increase and to aggravate all the other gastric diseases, as dilatation, hyperchlorhydria, chronic gastritis in its different forms, with which it may be associated.

It is well known that the amount of urine excreted in health is a measure of the absorption of water from the alimentary canal, the tension of the blood being unchanged from other causes. A constant symptom of obstruction of the upper part of the small intestine is scanty or suppressed urine.[1] No water is absorbed from the stomach in health; it must all pass into the intestines.

Bandl,[2] from experiment, finds that iodide of sodium in dilute solutions is not absorbed from the stomach; only when the solutions contain 3 per cent. or more is there a sensible absorption.

Moritz[3] says an important function of the pylorus is to protect the intestine from the passage into it of irritating stomach contents. When persons have slight heartburn, eructation of food or wind, with a feeling of weight after meals (in the absence of gross anatomical changes), we may presume that there is an untimely closure of the pylorus, due to irritating impressions made on the gastric mucous membrane. It is under these circumstances, and where people *will* drink cool drinks at meals, that carbonic acid water is useful.

The anesthetic effect of carbonic acid on mucous membranes has long been known. On the stomach, where slight irritating conditions of contents produce too prolonged a pyloric closure, carbonic acid water prevents these irritating impressions being felt, prevents the untimely reflex pyloric closure, and so allows an easy opening of the pylorus.

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[1] Van Balzah, Diseases of Stomach, 1898, p. 140.

[2] Bandl in Zeitschrift für Biologie, Band 29, p. 277.

[3] Moritz: Virchow's Jahresbericht, 1895.

The experiments I have made to demonstrate this action of carbonic acid water are of two kinds. First—Its action on the time of absorption of dilute solutions (1:1000) of potass. iodide, taken into the stomach, as shown by its appearance in the saliva. Second—Its action on the amount of urine secreted, after taking carbonic acid mixed with slightly irritating liquids. These experiments have all been made on a healthy man, at the same hour of the day, under the same amounts of food and drinks taken, at the same temperatures of the ingested fluids, and in the same kind of weather. I have found by experiment that all these circumstances influence, very markedly, the urinary excretion.

| Five grains Iodide Potass. Dissolved in— | Temperature. | Time taken. | Time showed in saliva | Deduct time to pass from intestine to saliva gland | Time of passing into intestine. |
|---|---|---|---|---|---|
| 8 ozs. claret and water...... | 60° F. | 10:30 | 11:00 | 5 min. | 25 min. |
| 8 ozs. water .................... | 63° F. | 10:30 | 10:48 | 5 min. | 13 min. |
| 8 ozs. carbonic acid water.. | 64° F. | 10:40 | 10:50 | 5 min. | 5 min. |
| Water and H Cl 2000—1.. | 60° F. | 10:30 | 10:43½ | 5 min. | 8½ min. |

AMOUNT OF URINE EXCRETED IN 80 MINUTES.
No liquid taken for four hours previous to experiments.

| After taking— | Temperature of Liquid. | Temperature of the air. | Urine. |
|---|---|---|---|
| 8 ozs. carbonic acid water...... | 63° F. | 58° F. | 4.5 oz. |
| 8 ozs. plain water............. | 63° F. | 58° F. | 3.2 oz. |
| Nothing .................... | | | 2.5 oz. |
| 8 ozs. carbonic acid water...... | 68° F. | 64° F. | 6.1 oz. |
| 8 ozs. plain water............. | 68° F. | 64° F. | 4.4 oz. |

The result of more than fifty experiments shows that where no liquid or food had been taken for four hours previously the urine excreted in eighty minutes was 75 centimeters or grammes. After plainwater at 64° F. 96 grammes. After carbonic acid water at 64° F. 135 grammes.

The use of carbonic acid in the water increased the diuresis, and also the passage of the liquid out of the stomach more than 40 per cent. Where the water and carbonic acid water was taken at 68° F., the air being 64°, the increase in the urine was 39 per cent.

Where, then, there is the slightest tendency to stagnation of the stomach contents as shown by occasional eructations, heartburn, scanty urine, constipation which does not depend on insufficient action of the rectum, carbonic acid water is a valuable corrective in place of ordinary water, and acts still better when mixed with wine instead of plain water. Also when any diuretics are given cold, their action is rendered more effective if given in carbonated waters.

1236 Market street.

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## VAGINAL HYSTERECTOMY.

By F. L. Adams, M.D., Oakland, Cal.

*Read before the Alameda County Medical Association.*

In treating this subject I propose to limit myself to the clamp operation, as I believe it to be more rapid and safer than any other. So long as the uterus is removed by surgeons, I have no doubt there will be those advocating the abdominal method, and those advocating the vaginal route, each school claiming for its method large percentages of recoveries, and better results. In hysterectomy, as in all other operations, the surgeon doing the work and taking the risk, is the one to decide which method he can best follow; he is, therefore, most likely to select the method which will give him the best results.

In vaginal hysterectomy, again, we shall find two methods of operating, first, by ligature, second, by clamp. As already stated in this paper I shall advocate the clamp method. I especially advise this method in chronic pus tubes, where there has been successive attacks of inflammation, and where we feel that the operation could not be performed from above without long manipulation and almost certain infection of the pelvic viscera

The advantages claimed for this operation are: (1) Greater rapidity; with two operators of equal skill, the one choosing the clamp method can do his work in one half the time consumed by the abdominal method. (2) The shock is far less, for several reasons. (*a*) The intestines are hardly touched, and when the abscess is walled off, they are not handled or exposed at all. (*b*) The shock from the anesthetic is much less on account of the rapidity of the operation. (*c*) We all know that upon opening the peritoneal cavity by the abdominal method there is frequently a profound shock. This is very much diminished, or is entirely absent, where the vaginal route is followed. (3) The dangers of infection of the pelvic peritoneum are far less, as the drainage through the vagina is almost perfect. Every movement of the patient tends to expel the pus. Coughing, vomiting, and the evacuation of the bowels, all tend to complete drainage. (4) This method can be successfully used in cases which are inoperable by the abdominal route; where the whole pelvic floor is matted together, and the uterus and adnexa could not be removed from above.

I shall now describe the method I consider best, as there are several plans employed by different operators who use the clamp. The patient, of course, should be as carefully prepared as for an abdominal incision. After as thorough a bath, or baths, as the strength of the subject will permit, the parts are shaved, and then cleansed with green soap. Frequent lysol douches, as strong as the patient can bear, are given, and the evening before the operation a compress of bichloride solution is applied, and kept upon the patient during the entire night. The bowels should be thoroughly opened with salines, and strychnine may be given if deemed admissible. When the patient is on the table the field of operation is again thoroughly cleansed with a strong bichloride, or lysol solution, and she is then placed in the position for lithotomy.

The best operators in Europe and in America follow a fixed *technique* for this operation, and the failures of those who operate but seldom are doubtless due to the fact that they are not systematic, and do not follow a definite course for each surgical procedure. I shall, therefore, divide this operation into distinct heads, or steps:

1. Introduce into the vagina two narrow-bladed retractors, or specula, and expose the cervix, which is seized by a strong tenaculum, two being used if thought best. The cervix should now be dilated thoroughly.

2. An incision is made around the cervix about 1 inch from the os, leaving a space on either side of about $\frac{1}{8}$ of an inch, which serves as a base for the broad ligaments. The object of this is to prevent pushing the uterine arteries upward and outward while separating the uterus anteriorly and posteriorly.

3. Ortmann's tenaculum sound, or Pryor's intrauterine forceps, is now introduced into the uterus. By this means the uterus can be easily manipulated, and a perfect guide is furnished for dissection.

4. Separate the uterus thoroughly—anteriorly, always keeping close to the uterus, and when necessary cut with blunt scissors. Now introduce the narrow-bladed retractor, or speculum, and push it well upward and backward, thus keeping the bladder and ureters out of harm's way. This process should be continued until the peritoneum is open, or until the fundus of the uterus is easily felt.

Now, in a similar manner, dissect posteriorly, keeping close to the uterus, until Douglas' pouch is opened, or until the fundus is felt, and the anterior and posterior openings communicate. With a strong tenaculum seize each lateral angle of the cervix, and remove the sound tenaculum or the intrauterine forceps.

5. The bladder is now held up by one retractor, the perineum held down with the other, and the uterus cut up as high as possible in the middle line. The upper angle of this cut is seized on either side and strong traction is again used. The incision is next extended still farther, until the cornua of the uterus appears. The uterus may now be severed on the posterior aspect, from below upward, with the finger back of it as a guide, or, if preferred, the posterior retractor may be removed, and an especially prepared grooved director is introduced back of the uterus, and then section is completed with the knife or scissors. The right half of the uterus is now pushed up into the pelvis and held by forceps, and all the other tenacula are removed.

6. Enucleation.—The left fingers, or hand, are introduced, and the left tube and artery are seized and brought down into the field of vision; or the ovarian forceps may be used when necessary. The left half of the uterus, the left tube and ovary, are now pushed up into the abdominal cavity, when much room is needed, or they may be clamped and removed. In a similar manner the right half of the uterus, and the right tube and ovary, are brought down and cut away. If there are adhesions to the bowel they may be brought into view and treated as in the abdominal operation. The advantage of section of the uterus is that we have the whole field in which to work, and during this time the clamps are not in the way of the operator.

7. Examine the field of operation carefully, and catch all bleeding points with forceps, and, when possible, bring the peritoneum and the vaginal surface together with clamps, and so cover the denuded surface, which will be a field for absorption. All bleeding should be carefully checked, and the field should be left free from blood; which, of course, is a most favorable culture medium for bacteria. Now introduce well above the clamps some sterilized gauze so that these are well guarded. This is most important, for pressure of the bowel upon the ends of the clamps will often produce sloughing and fistula. Packing should be placed between the vaginal wall and the clamps, and also between the clamps. Plenty of gauze is now placed over the entire mass. A self-retaining catheter may be left in the bladder, or the urine may be drawn at proper intervals. Some

operators dilate the sphincter ani, and thus avoid spasmodic action of that muscle. The clamps are removed in from thirty-six to forty-eight hours, and the gauze may be left in for a week, or longer.

I believe, that when the discharge is unusually foul, it is well to remove the gauze daily and irrigate. The special points of danger in this operation, are injury to the bladder, ureters, rectum and bowels, hemorrhage and sepsis. By dissecting closely to the uterus, anteriorly and posteriorly, the bladder and rectum can usually be avoided with ease. By keeping the bladder well raised by means of the anterior speculum, and dissecting well to the sides of the bladder, and being careful when the broad ligaments are clamped, to keep near the uterus, the ureters are usually preserved entire. Still, when all the tissues are matted together, the ureters may be injured by the best of operators. If the clamps are not placed until the uterus is bisected, there will be almost no danger of hemorrhage.

The operator should not cut too close to his clamps, and some operators tie the handle of each clamp when the dressings are applied. Sepsis has often preceded the operation, but it is our duty to use all the precautions of aseptic and antiseptic surgery to prevent its occurrence subsequent to the operation.

1106 Broadway.

## THE PREVENTION OF MASTITIS.

By W. F. B. WAKEFIELD, M. D , Oakland, Cal.

*Read before the Alameda County Medical Association.*

We are told statistics show that about 6 per cent. of nursing women are afflicted with mastitis. This is an outrage on modern obstetrical practice, and it is to be hoped that such statistics will soon be relegated to the annals of ancient history.

Let me quote from the text-book of one of the most distinguished among British obstetricians, G. Ernest Herman, M.B. (London), F.R.C.P.: "Painful Fullness of Breasts.—Sometimes, especially if the nipples are sore, or the child feeble, more milk is produced than the child draws out; the breasts become very full, swollen, knotted, hard, and tender; and this condition may make the patient feverish, and if not relieved may go on to abscess. If the breasts are so full as to be uncomfortable they should be emptied by a breast pump or a soda water bottle. If the child was still-born, or has died, or the mother is not going to suckle her child, this may be repeated as often as necessary, and will soon cease to be required; for if the breasts are deprived of the stimulus of a sucking baby they soon leave off producing milk. It would often be very desirable, in the case of babies too feeble to suck, or nipples too badly shaped for the baby to grasp them, to draw the milk from the breast with a pump and give it to the child with a spoon, but as a rule this cannot be done, tor the breast soon ceases to produce milk when the child is not applied to it. You need not, therefore, prescribe any medicines to drive away the milk. See that the breasts are made comfortable, and the milk will go away if the mother does not suckle "

Again, let me quote from one of our late American works on obstetrics. In this Grandin and Jarman say: "As soon as induration is detected in the gland, nursing should be interdicted, although engorgement of the mamma must be prevented by emptying the breast at regular intervals by the hand. An ice bag applied over the site of induration may abort it before pus formation."

Now, while I entertain the highest respect for the gentlemen from whose works I have quoted—and other text-books treat of mastitis along the same lines—nevertheless, I have no hesitation in saying that their advice in regard to the treatment of what Herman calls "painful fullness of the breasts" is wofully deficient, for they have failed to mention the one really good method of dealing with these cases.

My intention is to confine my remarks to prophylactic treatment, and not to discuss the other aspects of the disease in question. In order, however, that the rationale of my treatment may be plain, we must call to mind the causative factors in the production of mastitis. These I believe to be two: (1) Bacterial infection through the medium of sore nipples. (2) What Dr. Garrigues, of New York, calls "milk stasis."

I think we pay too little attention to this second etiological factor —"milk stasis." The production of milk is in excess of its consumption, and the breast becomes engorged; and this mechanical engorgement, if not properly handled, soon leads to congestion and inflammation.

*Prevention of Sore Nipples.*—We are often advised in text-books on obstetrics to recommend that our patient, especially if she be a primipara, put the nipples through a "hardening process" by the use of astringent or spirit lotions for two or three months prior of confinement. I mention this simply to condemn it in the most emphatic terms possible. I can think of nothing more likely to produce cracked and "sore" nipples than resort to this "hardening" process. Our aim should be, not to harden and stiffen the nipples, but exactly the reverse, to soften them and render them more pliable. For five years I have used in the treatment of sore or cracked nipples a formula, so far as I know, first recommended by Hirst, of Philadelphia, viz:

Castor Oil
Subnitrate of Bismuth—aa. part equal.

This I apply freely to the sore nipples. It has, too, the advantage of being non-toxic, and it is not necessary to wash it off each time the child nurses.

*Treatment of Engorged or Congested Breasts with "Caking."*—I have here nothing new to advocate, but simply a better application of an old remedy. The whole treatment consists in firm, evenly-directed pressure. Older surgeons recognizing the necessity for pressure tried bandaging or strapping the breasts. Neither of these plans gave satisfaction, the bandage slipping out of place, and the strapping being very uncomfortable. When Garrigues took charge of the New York Maternity Hospital, he determined to have some method by means of which firm, even pressure could be applied to the breasts; and Miss Murphy, the Lady Superintendent, invented a breast binder which was known as "The Miss Murphy Breast Binder."

These binders were kept made up in stock and were applied to the breasts of every patient after delivery as a routine measure. I do not consider it necessary to always apply these binders, but one should be in readiness for application whenever the breasts of your patients show the slightest sign of hardness, tenderness, or "caking."

Miss Snively, Lady Superintendent of the Toronto General Hospital, invented a modification of the "Miss Murphy Binder," which can be cut at the bedside, and precludes the necessity of keeping a made-up binder in our armamentarium. It has, also, the additional advantage of exactly fitting the patient.

To make the bandage take the bust measurement of your patient level with the nipples, cut your muslin one inch longer than this measurement, and sixteen inches wide. Fold it twice and mark off the center, then measure down four inches on the free edges and make a curved cut to center, then measure down nine inches on the other side and cut to the top, leaving a strip two inches wide. These cuts being made the binder is ready for application.

In applying the binder, strip the patient to the waist and arrange the binder so that the center of the scallop in the back comes opposite the center of the back of the neck, bring it around to the front and pin from below upwards, having the patient assist in drawing the breast as far as possible upward and inward. In order to have the same pressure on the inside as we have on the outside a large wad of cotton batting should be placed between the breasts. When the front has been pinned firmly from below upward, pin the shoulder straps (Fig. 1; 1 and 2, 3 and 4) in position to keep the binder from slipping down.

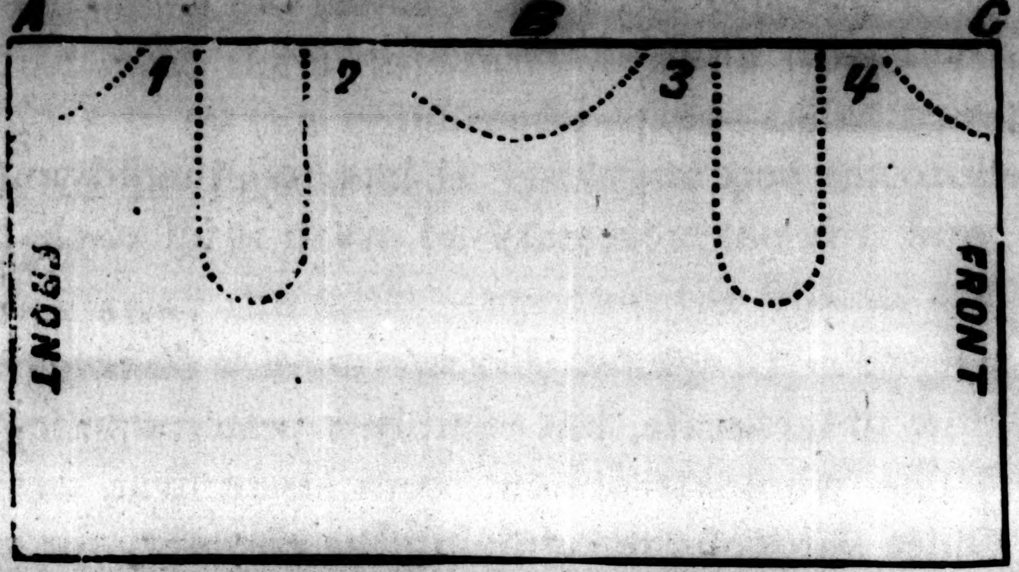

FIG. 1.

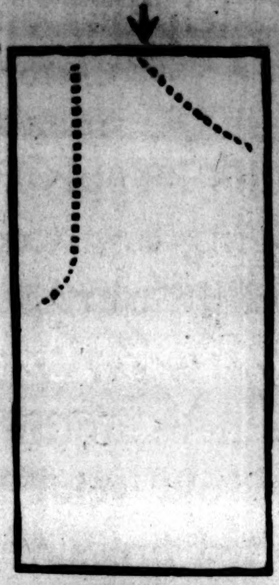

FIG. 2.

FIG. 1.—Showing outline of cloth (heavy line), with finished bandage indicated by dotted lines. Fold A to C, then B to C.

FIG. 2.—Showing cloth folded and ready for cutting (heavy line), with parts to be cut out indicated by dotted lines. Arrow head shows center of cloth, from which cut on right hand side, for neck, must be made.

The binder has one drawback which should ever be kept in view, it diminishes the secretion of milk, and therefore should only be used when the breasts show signs of tenderness and caking. It should only be applied tight enough to relieve the pain; and should be removed as soon as the breasts become soft, and tenderness disappears.

554 Fourteenth street.

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## OPERATIVE TREATMENT OF INGUINAL HERNIA.

By W. J. HANNA, M. D., Sacramento, Cal.

*Read before the California Northern District Medical Society.*

All plans for the radical cure of inguinal hernia were shown to be of uncertain value until the plan of transplantation of the spermatic cord and suturing of the pillars of the ring in layers was suggested and carried ont by Bassini, and in a different form by Halsted. Even these plans were often attended by failure on account of using non-absorbable sutures. In these cases the wound often healed by first intention, but a short time later a sinus would form in the cicatrix and refuse to heal until the offending sutures were removed. The canal in these cases was so weakened by slow suppuration that relapses often occurred

Schimmelbusch states "that it has been more than once observed in the primary closure of wounds by silk or silver wire, the ligature, at the beginning well imbedded in the tissues, after a long period of time becomes repelled and suppurates out. The primary union is satisfactory, but after weeks or months an abscess forms in the line of suture, whereupon a fistula develops, and from the latter the disturbing ligature escapes. Lister introduced six deep hemp sutures into the wound of an extirpated goitre, and after union observed the extrusion of all six in succession in the course of eight or nine months. The imbedded silk or silver wire simply remains as a foreign body in the tissues, of which the organism endeavors to free itself as soon as a favorable opportunity presents."

The ideal suture, then, would be one that would hold the parts in apposition for a length of time and then disappear by absorption. In the kangaroo tendon, as prepared and used by Dr. H. O. Marcy, we have a buried suture which meets all requirements. A wound closed antiseptically in layers with this material leaves no pockets to become distended with blood or serum. Histological investigations have shown that the antiseptic tendon, or animal suture, is little by little invaded by leucocytes, and is gradually transformed into connective tissue cells, until the structure is in a large measure replaced by a band of living tissue. This fact is of the greatest importance in hernia operations where the structures have long been defective.

Wounds closed in this manner are rarely painful, edematous, or even tender to touch. Coley reports a series of 250 cases in which the kangaroo tendon was used for the buried sutures, with not a single instance of sinus formation, and the percentage of primary unions was 96. In order to accomplish these results it is necessary to master the art of surgery, which can only be accomplished by serving an apprenticeship under the personal instruction of a master. *Technique* can never be obtained from books.

In Bassini's method an incision is made through the integument and superficial fascia over the inguinal canal about three inches long, extending above the internal ring and down to the scrotum, care being taken not to incise the scrotum itself, which is done in the interest of asepsis, and of a chance for better approximation of the edges of the wound. This exposes the intercolumnar fascial covering of the hernia, which is the most superficial of the three coverings common to the cord and the hernial sac; the other two being the cremasteric fascia and the transversalis tascia. All of these coverings must be divided before the peritoneal sac is exposed and separated from the tissues of the cord. The intercolumnar fascia should be divided the entire length of the sac and as high as the internal ring. The cremasteric fascia can be recognized by the looped muscular fibers running through it. The transversalis fascia is recognized simply from its position. After incising the above structures, a layer of subperitoneal fat may intervene between the transversalis fascia and the peritoneum. This is often mistaken for the omentum.

The sac is now carefully isolated and separated from the cord as high as the internal ring. If the sac contains either omentum or intestine, it should be opened and the contents reduced. The sac is clamped as high as possible and the redundant portion cut away. Before removing the clamps, the sac, or more properly the peritoneum, should be carefully closed by a fine continuous suture. The spermatic cord is now lifted out of its bed, the aponeurosis of the external oblique is separated from the conjoined tendon, and Poupart's ligament is freed from adjacent tissues. The entire inguinal canal is now closed by suturing together the transversalis fascia and conjoined tendon on the inner side to Poupart's ligament on the outer side. The spermatic cord is now laid over this closed canal and covered by suturing over it the aponeurosis of the external oblique. The internal incision is closed without drainage. Marcy recommends that this closure be made by a line of buried sutures, which prevents stitch abscesses, and if iodoform collodion is used as a dressing it holds the divided edges of the skin in fixation—at rest, and also prevents the possibility of subsequent infection. A fine chromacized catgut continuous suture, with a dressing of silver foil, has been used with success.

In the Halsted operation the external incision is carried nearer the anterior superior spine of the ilium. The spermatic veins are ligated as high up as possible, and again at a second point below the external ring The portion between the ligatures is cut away leaving the vas deferens and a few vessels. The canal is now closed with sutures which pass through the conjoined tendon, transversalis fascia and external oblique internally, and Poupart's ligament externally. The cord is then laid over this closed canal and the external incision closed as before.

Kocher has brought forward a method, in cases where the sac is not too large or its walls too thick, in which a small opening is made in the strong portion of the external oblique above and external to the region of the internal abdominal ring. Through this opening and between the external and internal oblique muscles a pair of curved dressing forceps is passed until they emerge at the external ring where they are made to seize the fundus of the isolated hernial sac which is drawn from below upward between the muscles and out through the small opening above mentioned. The portion of the sac which is brought through the opening is transfixed and stitched to the adjacent part of the abdominal wall. The sac is now folded together and placed upon the outer surface of that part of the external oblique which forms the anterior wall of the inguinal canal and is fixed to it by two or three sutures, which should take as deep a grip as possible of the upper and lower walls of the canal and should therefore pass immediately over the spermatic cord, which is kept pulled downward and protected by means of the finger introduced into the canal.

Recently the sac has been directed outwards toward the anterior superior iliac spine and sutured to the aponeurosis of the external oblique in order to stretch the peritoneum still more in an outward direction, and to make it impossible for a hernia to escape along the line of the spermatic cord. The operation is completed by passing a suture deeply through the internal ring close to and beneath the neck of the sac, and other sutures are introduced to shorten and strengthen the anterior wall of the canal in the region of the cord. The displacing of the sac solves in a very simple manner the problem of preventing the exit of a hernia by an opening which is normally patent.

In a report of 197 operations by this method primary union was obtained in $91\frac{8}{10}$ per cent. All but twenty of the patients were over fifteen years of age. Of 111 cases which could be followed, there were four recurrences, or a percentage of $3\frac{6}{10}$. No patient died from the operation.

In selecting the particular method to be used the surgeon should be governed by the individual case; he should familiarize himself with the operation so as to be prepared to relieve cases that are strangulated or to cure those that are troublesome. As regards the risk entailed, the operation is relatively safe, the mortality being less than 1 per cent. Relapses occur in less than 10 per cent. of all cases. Under these circumstances, the operation should be recommended in a very large majority of all cases suffering from hernia.

Through the kindness of Dr. Browning I have been permitted to be present at the State Prison during six operations. The first two being performed by Dr. Huntington, and the other four by Dr. Browning and myself. The records show that the results have been satisfactory in every respect. The patients were kept in the hospital for about one month, when they were seemingly perfectly restored to health, the tissues being firm. They were then placed on the "incapable list," where they had no work to do, but took some exercise in the yard. They remained on this list for another month or six weeks, when they were put to work with the rest of the convicts at any kind of labor that came along. They all have been doing well; there being no relapses in any of the cases, the first case operated upon being of two years' standing.

426½ J street.

# DEPARTMENTS.

## OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

By Wallace A. Briggs, M.D., Sacramento, Cal., and

Wm. Fitch Cheney, B.A., M.D., Adjunct to the Chair of Obstetrics and Diseases of Women and Children, Cooper Medical College, San Francisco, Cal.

**A Speedy Method of Dilating the Rigid Os.**—Dr. J. Farrar, in a paper read before the Section of Obstetrics, British Medical Association, mentions a rapid method of overcoming this troublesome condition, which is best described by the following illustrative cases and comments: *Case 1.*—I had been in attendance on a primapara on and off for some 48 hours. The os was thin, rigid, and obstinately unyielding; frequent attempts at stretching it, first with the finger then with a mechanical dilator, both with and without chloroform, and afterwards with indiarubber bags, had all proved futile; as had also the internal exhibition of approved medicaments, chloral hydrate, bromide of potassium, morphine, etc. In spite of these attempts, however, the os still remained firm, its margin feeling almost like a circle of sheet tin, and its orifice not larger than a shilling. The pains were very strong, frequent, and almost persistent, and the patient—who was, I should add, a deaf-mute—was losing self-control. The case was therefore becoming serious, and as it was necessary that relief should be given without further waiting, I determined to incise the margin of the os. The woman being, as I have said, a deaf-mute, and exceedingly frightened and despondent at the condition of matters, I could not on the one hand, as in ordinary cases, talk and reason with her, and tell her what I proposed to do; and, on the other hand, I scarcely thought it prudent to further alarm her by the pain she would feel on the incision being made, as this would probably make her quite unmanageable; and as, further, the administration of chloroform was contraindicated owing to symptoms of approaching exhaustion, I had only local anesthesia left to me. The anesthetic I chose was cocaine. With a 10 per cent. solution of the hydrochlorate on a piece of rag I smeared the os round and round, first on the outside and then within, finally leaving the rag within the margin and the head of the child. At the end of four minutes, by which time I considered anesthesia would be sufficiently advanced for my purpose, judge of my astonishment—and, I may say, my gratification—when on introducing the scissors to make my limited incisions, I found the os had not only lost its rigidity, but that it was widely open, and as flexible and distensible as a rubber bag. How had this sudden change in the physical condition of the os been brought about? Was it one of those striking cases of coincidence which the medical man meets with occasionally, or was it owing to the application of the cocaine? It struck me very forcibly that mere coincidence could not satisfactorily explain the phenomonon. The change was too striking and too suddenly brought about; and I felt strongly that coincidence had nothing to do with it, but that it was the cocaine, and nothing but the cocaine, that I must credit with the alteration. However, before venturing to publish the case, I decided to wait for an opportunity of further testing this supposed power of the drug, and luckily, I had not long to wait; for in a couple of months' time I had a case which I felt would prove to be a severe test for the experiment. *Case 2.*—This patient also was a primapara, but one over 40 years of age. The os was obstinately rigid, the pains very strong and frequent; there was a suspicion of approaching exhaustion, and also much despondency on the part of the woman at the slow progress she was making—for she had been in labor nearly three days. After waiting nearly this length of time to give nature every chance, I applied the solution of cocaine, but not, I must confess, without some degree of "fear and trembling," as to whether the result would confirm my ardent wishes, or leave me disappointed. But lo, and behold! in four minutes' time the os yielded, and, as in the former case, was now so distensible that I was easily enabled to slip it over the head of the child, and complete the delivery in due course. After this I felt there could be no question as to what had brought about this sudden and striking change in the physical condition of the os. Surely it could not simply be an accident of time—a coincidence merely, but rather the direct result of an applied and active cause, this being the application of the cocaine, and nothing but the cocaine The author reports three additional cases. in all of which the method was equally successful. *British Medical Journal.*

**Symphyseotomy.**—DR. WILLIAM S. CARR, of Washington, D. C., in discussing this operation, says: The ordinary rules of asepsis and antisepsis must, of course, be rigidly observed, and, in addition, I have the following three suggestions to make. (1) The incision need not extend as low as it is usually made. The lower angle of the wound may be pulled down with a retractor, after the incision has been made down to the bone, and sufficient room thus gained to complete the operation safely without extending the skin wound nearer than two inches to the urinary meatus. This, I believe to be an important detail, as it greatly lessens the chances of infection. (2) The bone should be carefully and thoroughly separated from the tissues behind and below, great care being taken to keep next to the periosteum. It is also important that this separation extend from three-fourths of an inch to one inch on each side of the median line, to insure the safety of blood vessels and urethra when the bones are separated. Several large anterior vesical veins and veins from the clitoris lie embedded in the fat and loose connective tissue between the anterior wall of the bladder and urethra and posterior and inferior surface of the pubic arch; but these vessels are safe and the urethra is safe if freeing of the bone is carefully done. After the bones are freed all round, the joint may be divided with a Galbiata knife, or preferably with an ordinary scalpel if the precaution be taken of first passing a grooved guard behind the line of incision, as recommended by Farabeouf, Lusk and others. The articular surfaces are not plane surfaces. Irregular rounded projections of bone, except in very young subjects, will frequently be found passing across the median line from one side or the other and fitting into corresponding concavities of the opposite bone, with only a thin layer of cartilage between. This makes the line of incision irregular, and the irregularities can better be followed with a thin, sharp-pointed knife. If a thick knife be used these bony projections must be cut through forcibly. (3) I would recommend wiring the bones. I can conceive of no possible valid objection to uniting them firmly with stout silver wire, and I believe that this will very materially shorten the time necessary for firm union, that it will insure firm union, and that it will add immensely to the comfort of the patient subsequent to the operation. I am aware that necrosis and suppuration have been attributed to the use of silver wire in this manner, but I freely confess that I do not believe such troubles can be justly attributed to the wire or wiring. They could have been due to nothing but infection; and should infection of the wound occur it would be an easy matter to remove the wire. Farabeouf, Pinaud and Caruso recommend silk sutures through the tough ligamentous tissue anterior to the pubes. Such silk sutures are worse than useless. When the strain of separation comes upon them they will tear through the tough tissues like hot wire through butter; and silk ligatures are vastly more irritating and vastly more apt to become infected than silver wire. It has been pretty thoroughly and conclusively proven by Kelley and Halstead, and many others, among whom might be included Marion Sims, that silver wire is the least irritating of all sutures; that it rarely, if ever, has to be removed on account of suppuration; that, on the contrary, it strongly tends to prevent infection. Silver sutures may be put through the bones almost as easily and quickly as silk through the ligaments. Bone is the only tissue in which ligatures, subject to such a strain, will hold, and two stout silver wires will stand the strain and maintain perfect apposition. Lusk says: "The weak side of symphyseotomy is the imperfection of all methods thus far devised to secure coaptation of the parted surfaces after the operation." I believe that the weak side may be made strong, and that we are entirely wrong in blaming silver wire with bad results due to infection or other causes. The safest of all material to bury is silver, and the safest material to bury it in is bone —*American Journal of Obstetrics*, October, 1898.

**Bacteria of the Vagina.**—In a paper upon this subject, DR. J. WHITBRIDGE WILLIAMS, of Baltimore, presents the following conclusions: (1) We agree with Kronig that the vaginal secretion of pregnant women does not contain the usual pyogenic cocci, having found the staphylococcus epidermidis albus only twice in 92 cases, but never the streptococcus pyogenes or the staphylococcus aureus or albus. (2) The discrepancy in the results of the various investigators is due to the *technique* by which the secretion is obtained (3) As the vagina does not contain pyogenic cocci, autoinfection with them is impossible, and when they are found in the puerperal uterus, they have been introduced from without. (4) The gonococcus is occasionally found in the vaginal secretion, and during the puerperium may extend from the cervix into the uterus and tubes. (5) It is possible, but not yet demonstrated, in very rare instances, that the vagina may contain bacteria, which may give rise to sapremia and putrefactive endometritis by autoinfection (6) Death from puerperal infection is always due to infection from without, and is usually due to neglect of aseptic precautions on the part of the physician and nurse (7) Puerperal infection is to be avoided by limiting vaginal examinations as much as possible and cultivating external palpation. When vaginal examinations are to be made, the external genitalia should be carefully cleansed and disinfected, and the hands rendered as aseptic as if for laparotomy. Vaginal douches are not necessary and are probably harmful.—*American Journal of Obstetrics*, October, 1898.

**Adenoma of the Breasts.**—DR. L. A. BALLOCH, of Washington, D. C., writing upon adenoma of the breast, says: The aim of this paper has been to lay stress upon the following points. (1) Adenomata are not the harmless growths that many believe them to be, and there is a great probability that they may and do become cancerous. (2) That the let-alone and do-nothing policy is to be condemned. (3) Medicinal therapeutics, external and internal, are useless. (4) Early recourse to the knife affords a safe and satisfactory method of dealing with them, and will often spare us the mortification of seeing our patients fall into the hands of charlatans.—*American Journal of Obstetrics*, October, 1898.

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## SURGERY AND ANATOMY.

By T. W. Huntington, B.A., M.D., Surgeon Southern Pacific Company's Hospital, Sacramento, Cal., and Geo. B. Somers, M.D., San Francisco, Cal.

**Operating Theaters.**—Students do not flock nowadays to the surgical theater as the populace used to flock to an execution, or at least not to the same extent as formerly. The glorification of mere manual dexterity has also greatly diminished. It is seen that if you know what to do there is little difficulty in doing it. And so a surgical operation has come to be regarded as an incident in a case, and the theater has become an appendage to the ward, in which whatever manipulation is necessary may be carried out in the way most advantageous to the patient and most beneficial to the student, as a sequel to the diagnosis and a preliminary to the after treatment.—*British Medical Journal.*

**Mixed Anesthetics.**—There is a physical reason for doubting the manageability of mixed anesthetics, due to the fact that if two agents of different maximum points of evaporation be mixed together the more volatile of them will increase the evaporation of the other by carrying off more of the less volatile one than if the latter were vaporized by itself. Thus more chloroform would be inhaled if mixed with ether than if it were administered separately. —*Medical Record*, September 3, 1898.

**Condyloid Fractures.**—It has been my practice to treat these fractures with the elbow extended, and to carefully compare the injured with the sound limb, in order to preserve by my splints the humero-ulnar angle. I reduce the fragments, compare the two arms, and apply a splint of wood, or of gauze and gypsum, to keep the joint not quite fully extended. Full extension is more likely to prove irksome to the patient, and it is a wise precaution to run no risk of displacing the fragments by hyperextension of the injured joint. The extended elbow in these fractures has been advocated for various reasons. It has been said that it enables the surgeon to appreciate more readily any change in the deviation of axes than the right-angle position, which crowds up the soft tissues in front of the joint and obscures the position of the fragments. The angular deformity to be avoided has been attributed to the displacing influence of the triceps, which is relaxed by employing the extended posture. If the extended elbow is combined with supination of the radius, the biceps is also considerably relaxed. The position advocated seems, therefore, to relax the important displacing muscles Strong clinical evidence of the worth of the extended position is the assertion of Thompson, of Washington, who was able, in two open fractures, to keep the fragments in position when the arm was extended, but found that they were displaced if he attempted to keep them in position with the elbow at a right angle.—Dr. John B. Roberts, in the *Philadelphia Medical Journal*, September 24, 1898.

**Surgical Technique.**—Sänger, of Leipsic, according to A. Lapthorn Smith, attributed his success to very rigorous asepsis, he and all his nurses and assistants preparing their hands for twenty minutes before the operation. For ten years he has been using coarse sand and soft soap for his hands, followed by alcohol and then sublimate water. He uses nothing but silk, which is prepared as follows: First it is boiled in $\frac{1}{100}$ washing soda to remove dirt, and then in Bergman's solution, namely, 10 of sublimate, 200 of alcohol and 800 of water. It is then wound on little pieces of wood, on which the size is marked, and kept in sublimate alcohol. The assistant in charge of ligatures burns them instead of cutting them.—*Canada Medical Record*, August, 1898.

**Avoidance of Sepsis.**—In speaking of the operation for myomectomy KELLY mentions the following points in reference to the *technique:* (1) Avoiding any direct contact with the hands, the operator and assistants wearing rubber gloves. (2) Avoiding unnecessary manipulations. (3) Isolating the field of operation by gauze packing. (4) The prevention of hemorrhage, which may produce a focus of infection.—*Denver Medical Times*, September, 1898.

**Fractures of the Patella.**—DR. C. A. POWERS enumerates the following conditions tending to cause imperfect union, and the obstacles to union, as follows: (1) Separation of the fragments are due to—(*a*) Retraction of the upper fragment from contraction of the quadriceps femoris, and a slight drawing down of the lower fragment through a shortening of the ligamentum patellæ; (*b*) effused blood. (2) Tilting of the fragments. (3) Rupture of the tendinous expansion of the vasti and of the lateral portions of the capsule of the joint. (4) Prolapse of the pre-patellar tissues into the breach. (5) Atrophy of the quadriceps femoris, due to—(*a*) Disuse; (*b*) arthritis; (*c*) marked contusion of the muscle; (*d*) blood extravasated from the joint through a rent in the upper part of the capsule. (6) Arthritis of the knee-joint, this, possibly, resulting in—(7) Adhesion of the patella.—*New Orleans Medical and Surgical Journal.*

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## OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

By WM. ELLERY BRIGGS, M.D., Sacramento, Cal.

**Operation for Mastoid Disease in Infants and Young Children.** — DR. HOWARD J. STILES says that middle ear complications are common in infants as well as children, but that intracranial complications appear to be relatively less frequent in children than in adults. This is, no doubt, due to the absence of mastoid cell in children, and to the fact that the antrum, being situated well above the tympanic cavity, drains directly into it, and thence through the perforated or defective drum into the meatus. While intracranial complications are comparatively rare, mastoid abscess—with or without caries, sinus, or sequestrum—is more frequent, and constitutes, in fact, the commonest complication of middle ear disease in children. As long as the drainage from the antrum is good, the discharge may go on for months, or even years, without complications If, however, the inflammatory products within the antrum are unable to escape by way of the tympanum and auditory canal, the infective material finds its way to the surface, in the majority of cases, through the thin outer wall of the antrum, either along the course of the minute veins which traverse the bone in this situation, or by carious invasions. When the discharge from the ear is profuse and of long standing caries or necrosis is almost invariably present in the neighborhood of the mastoid, even though there be no abscess. Less frequently the inflammatory process extends through the tegmen tympani into the middle fossa, or through the posterior wall of the antrum to the lateral sinus, and still more rarely alongside the eustachian tube to the posterior wall of the pharynx, where it gives rise to retro-pharyngeal abscess. These facts show that opening the mastoid antrum of infants is frequently called for. It is important to study the anatomical peculiarities of the temporal bone of infants from a surgical point of view. The mastoid process is absent in the infant and does not begin to develop until the second year. The absence of the mastoid process leaves the stylo-mastoid foramen—and, therefore, the exit of the facial nerve—exposed upon the lateral, not the under surface of the base of the skull. The posterior extremity of the temporal crest in the adult forms a distinct ridge and constitutes the guide to the roof of the antrum. In infants no such ridge can be felt. The relatively large size of the antrum, the thinness of its outer wall, and the relatively greater distance of the lateral sinus behind it, all help to simplify the operation in the child. The steps for the operation of opening the mastoid antrum in infants may be given as follows: The knife is introduced at a point a little above the upper attachment of the auricle, avoiding the temporal artery, the incision is carried downward and backward close to the attachment of the auricle. As far as a point on a level with the middle of the meatus, the incision should extend through the temporal muscle down to the bone; but below this point it should divide integument only, in order to avoid injuring the facial nerve. The periosteum along with the cartilaginous portion of the external auditory canal is then detached downwards and forwards until the rudimentary osseous roof of the canal is exposed. The divided lower edge of the temporal muscle, along with the subjacent periosteum, is then separated upwards and backwards, so as to expose the whole outer wall of the antrum. The chisel, or, in infants, the burr, is then applied to a point a quarter of an inch above and behind the roof of the osseous meatus, that is to say, a few millimeters above the tubercle at the upper extremity of the posterior segment of the tympanic horseshoe. Having got into the antrum, the opening is cautiously enlarged and the inflammatory products are removed. Should a sinus exist it will be found to traverse the outer wall of the antrum. In those instances in which the sinus is placed further back than usual, it must be enlarged in a forward direction, or it may be necessary to make a fresh opening into the antrum in front of it, in order to avoid the lateral sinus. In cases of acute mastoid disease it is not always necessary to enlarge the opening into the tympanic cavity to clear out the latter. In chronic cases, after freely opening the antrum, it is always advisable to test the patency of the auditus, for which purpose a bent probe is usually employed. Should the auditus be found narrow or blocked, it is often advisable to remove the incus and, in some cases, the malleus, with a sharp hook. In order to do this satisfactorily, it will be necessary to remove that portion of the osseous roof of the canal which intervenes between the extremities of the tympanic horseshoe; in other words to perform Stack's operation. After, or even before, the end of the second year, the mastoid process, the outer wall of the antrum, and the osseous meatus undego rapid development, so that when the child has reached the age of three or four years, the operation is practically the same as in the adult.—*British Medical Journal*, October 15, 1898.

**The Use of The Bernays' Aseptic Sponge in the Nose and Naso-Pharynx, with Special Reference to Its Use as a Pressure Hemostatic.**—DR. W. K. SIMPSON says the aseptic sponge devised by Dr. A. C. Bernays is a prepared product of cotton fiber, subjected to 100 pounds pressure, cut in circular form with a die, about $\frac{1}{16}$ of an inch thick, and of two sizes—one 1½ inch in diameter, and the larger 1½ inch. It is claimed that the absorbing power is much higher than that of gauze, cotton or sea sponge. When dropped in water it absorbs the liquid and expands to more than fifteen times its size, absorbing twelve times its weight of water. They are made absolutely aseptic by pressure and subjection to disinfecting vapors. The advantages of the use of Bernays' sponge as a tampon is very marked in comparison with the usual method of packing the anterior and posterior nares with absorbent cotton, or long strips of gauze. This can be fully appreciated in treating severe forms of epistaxis, or secondary hemorrhage remotely following operations, and also in the security it affords us in controlling hemorrhage at the time of the operation, or during the time the patient is sent away with the nose tamponed. To apply them to the anterior naris they should be cut in semi-circular form of the desired size, and then with the nostril well dilated and illuminated, and inserted with the convexity upward parallel to the septum. The thinness of the sponge allows it to be inserted with ease to any remote point within the nasal cavity. If it is necessary for the patient to remove them a ligature may be inserted in the proximal end. To obviate too great pressure it may be necessary to split the sponge to any size that is deemed sufficient. In case hemorrhage is feared the patient may be supplied with properly shaped sponges for self-introduction. For tamponing the posterior nares, the smallest size disc may be used, in some cases without any shaping, but if too large, a small piece may be cut from either side of the disc, and after a hole is made in either end for the reception of the strings, the plugging may be proceeded with in the usual manner In fastening the strings in the sponge for posterior tamponing, it is well to leave sufficient loop so as to give the sponge a full space for enlarging. The author has found the sponges useful in other cases where pressure is required on the nose.—*New York Medical Journal*, October 1, 1898.

**Enlargement of the Lingual Tonsil as a Cause of Cough.**—DR. BEVERLY ROBINSON says that it has been recognized by laryngologists for many years that chronic hypertrophy of the lingual tonsil is a cause of cough. He does not, however, believe that many of them have appreciated the frequency of the condition, because it does not invariably occasion annoying symptoms. They cause a sense of constriction of the throat, a sensation of a foreign body in the region above the larynx, and a dry, irritative, and more or less continuous distressing cough. We rarely find lingual hypertrophy in young men; quite frequently among unmarried women. Chloro-anemia, accompanied with obstinate constipation and adjoined to improper food and undue taxation of the physical and mental forces, appeared to account for many of these instances. With women, over forty, gout and rheumatism evidently played an important role in causation. With adult males this etiology was also efficient, but never in an equal number of cases. This is the cause of a cough, too often called nervous cough, in a male or a child, and hysterical, perhaps, in a woman. The acute congestion or catarrhal inflammation with tumefaction of these tonsils is often overlooked as a cause of cough. This is true of children as well as of adults. In adults it is easy to demonstrate the enlargement of the lingual tonsil, but in children it is often difficult to make a proper examination. The main symptom of acute congestion of the lingual tonsil is an irritative, frequent cough. In the beginning there is little expectoration; in a few days there is some frothy expectoration after each paroxysmal cough. Later there is usually a small amount of tough, thick, muco-purulent expectoration, and not infrequently a slight expectoration of blood. The cough is worse, as a rule, when the patient lies down at night. The treatment should first be directed to determine if any underlying constitutional dyscrasia is present, and, if found, treat it rationally. Many cases will be benefited by salicylate of sodium or ammonium, colchicin, guaiacum, etc., given internally, which are not relieved by the ordinary cough mixtures. Local applications by means of brush or sponge are often effective. For this purpose the compound tincture of iodine with an equal amount of glycerine and water is most useful. Sometimes counter irritation with compound tincture of iodine applied to the skin to the point of redness or blistering will be effective. With small children the frequent inhalation of antiseptic vapor of creasote or creolin, by means of a suitable croup kettle or other inhaler, is important If benefit does not result from a few days' use of the above-mentioned treatment a change of air is indicated. Whenever the lingual tonsil becomes chronically enlarged, three methods of treatment remain: (1) The electro-cautery. (2) The snare. (3) Ablation with a properly constructed amygdalotome. The author employs the first method.—*New York Medical Journal*, October 1, 1898.

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## DERMATOLOGY, SYPHILIS AND VENEREAL DISEASES.

**Herpes Zoster and Facial Paralysis.**—GROSSMAN records a patient, æt 87, who commenced to complain of a troublesome irritation over the region of the cervical plexus. A few days later a herpetic exanthem appeared over the region supplied from this nerve center as well as that supplied by the third branch of the trigeminus and facial, which lasted two and a half weeks. During the zoster there were irritation phenomena of the vasomotor in the right side of the face in the shape of a swelling of the cheek with a pale, bloodless appearance. Eleven days after the appearance of the zoster, complete paralysis of the lower branch of the facial was discovered, and on the following days the right eyebrow was found to be similarly affected. After the herpes disappeared the patient was affected with a return of the disturbed sensation over the cervical plexus with severe neuralgia.—*Medical Press and Circular*.

**Septic Infection of the Urinary Tract.**—In discussing this subject in the Section of Surgery, British Medical Association, MR MANSELL MOULLIN, of London said: I cannot help thinking that a great deal of the obscurity and confusion that exist in connection with diseases of the urinary organs arise from the fact that they have been to a great extent separated from general surgery and considered as a subject more or less apart Inflammation of the urethra, strictures, the operations required for it, and the many and striking complications that not infrequently follow are looked upon as something peculiar that has no parallel elsewhere. So, though perhaps to a less extent, with diseases of the bladder and kidneys; and, as a consequence, the septic origin of cystitis and of inflammation of the other urinary organs have been, to a great extent, overlooked, and various more or less fantastical explanations have been suggested for the rigors and other symptoms that so frequently occurred. As a matter of fact the urinary organs are liable to the attacks of septic organisms in the same way as all the other structures in the body, perhaps to an even greater degree, and making allowances for certain peculiarities of structure and function the consequences are essentially the same. So long as they are healthy the kidneys are free from organisms; it is even probable that they possess a germicidal power in a greater degree than most other organs; they are engaged in separating off an aseptic fluid, the urine, from the blood which is itself aseptic, and the urine passes down the ducts and collects in the reservoir, the walls of which are absolutely deprived of germs. The aseptic character of the urine was first demonstrated by Pasteur years ago, then by Lister and many others, and anyone who chooses to take the trouble to draw the urine off, with sufficient precautions (and the trouble is a very great one) can prove it for himself. So long as the organs and the urine are free from micro-organisms any operation can be performed upon them without causing any other ill result than that which is due to shock, namely, either retention or suppression of urine. Unfortunately the urinary organs are particularly liable to be attacked. The germs may reach them in various ways. They may come through the blood stream, infective emboli becoming caught in the vessels of the glomeruli, the walls of which give way and discharge their contents into the urinary passages. They may come from neighboring organs through the lymph stream. This has been proved, so far as the rectum is concerned, in the case of animals. Many of the cases of unilateral pyelitis occurring during pregnancy are caused this way. The ureter is obstructed; some transient intestinal disturbance enables the bacillus coli to penetrate the wall of the bowel, and it enters directly into the pelvis. The same thing is often met with in cases of salpingitis and endometritis, the germs passing directly through the walls of the neighboring organs, and at last infecting the urine. But undoubtedly the chief mode of infection is directly from without, through the urethra. In men this is difficult apart from instrumentation, for anatomical reasons. In women it is very easy—so easy that cystitis often arises, merely from the recumbent position necessary after severe operation preventing the bladder being emptied. But there are corresponding disadvantages. It may be difficult for the germs to get in, in the case of men; it is equally difficult for them to get out, especially if there is any residual urine; while with women nothing can be easier. There are, therefore, two modes of infection—one through the tissues, the other through the urine. In the former case of course the urine becomes infected at once. In the latter the tissues may not become infected at all, and then what is known as bacteriuria is established. This merges by indefinite steps into slight suppurative cystitis. If the germs acquire greater virulence, or the wall of the bladder is injured in any way, inflammation sets in at once: so that naturally there can be no line drawn between bacteriuria and suppurative cystitis. These cases are sometimes spoken of as catarrhal cystitis, but the term is misleading, and should be dropped. I agree with Guyon's school that the colon bacillus is the organism most frequently present in septic diseases of the urinary organs; and I am glad to hear that Professor Rovsing, of Copenhagen, who participated in the discussion, has found it in a large proportion of his later cases. Of course, the fact that the organism is the most frequently present is no proof that it is the cause to the exclusion of others, and it is highly probable that cases in which there is a mixed infection are the worst. But there can be no doubt that the colon bacillus is capable, under special circumstances, of acquiring a virulence that is amply sufficient. Its frequency is to be accounted for by the ease with which (when there is any intestinal disturbance) it can traverse the wall of the intestine and infect the urinary organs either through the blood stream or the lymphatic system; and also by the ease with which it can be carried in through the urethra. The rigors that are met with after internal urethrotomy are due to the toxins produced by these organisms being rapidly driven into the circulation, and are exactly comparable to those that are caused by the hypodermic [illegible] half a [illegible] of Coley's fluid. The deaths [illegible] [illegible] typhoid symptoms that sometimes occur at the beginning of [illegible] are due to slow septic poisoning, to the bladder [illegible] emptied thoroughly and kept empty; and the symptoms they present are identical with those that occur in old men when operation wounds become septic. All the complications of urinary surgery, in short, with the exception of retention and suppression of urine, are forms of septic poisoning in one shape or other. The general principles of treatment, therefore, are easily laid down. The details would take too long to enumerate, much less describe.—*British Medical Journal*, October, 1898.

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## MATERIA MEDICA AND THERAPEUTICS.

By Wm. Watt Kerr, M.A., M.B., C.M., Professor of Clinical Medicine, University of California, San Francisco.

**Tetanus Treated with Antitoxin Serum.**—Mr. R. G. Patterson reports the following case (*Dublin Journal of Medical Science*), as an appendix to two successful cases recorded in a former issue of that journal: J. H——, aged 16, was admitted to the Meath Hospital, at 2 A. M., on Friday, 10th June last, suffering from symptoms of acute tetanus; risus sardonicus, trismus, rigidity of abdominal muscles, and arching of the back being well marked, while clonic spasms were recurring at frequent intervals. The history elicited was, that on Wednesday evening, the 8th inst., he had received a punctured wound of the sole of the foot by treading on a nail, and had complained of pain in the neck and "rigors" the following evening, which increased so much in severity that he was brought to the hospital at an early hour on Friday morning. The wound was touched with carbolic acid, and poulticed with boric acid; and, the gravity of his condition being recognized, he was at once given an injection of 10 cc of antitetanic serum; and full doses of potassium bromide and chloral hydrate were continued during the night. I saw him at 10 A. M. the same morning, and had him at once removed to a separate ward. All the symptoms had increased in intensity during the night, and, feeling that nothing except energetic treatment offered any hope of saving his life, I ordered 10 cc. injections of serum to be given every four hours. On examining the seat of injury I found a punctured wound in the ball of the left foot, in which, underneath the thickened epidermis, a circular zone of dirt—presumably earth—could be distinctly seen. Accordingly, although late, I determined to freely excise the infected area, which was done by a large oval incision right down to the bone. The exposed tissues were then thoroughly cauterized with glacial carbolic acid; the wound plugged with boric wool, and a dressing applied. At this stage the spasms were increasing in frequency and severity, though he was still able to swallow liquid nourishment, but during the afternoon it was noticed that the respiratory muscles were becoming affected, each spasm ending in a severe attack of dyspnea and cyanosis, from which, after an interval of some seconds, he recovered. At 6 A. M. on the 12th, the following morning—the fourth day from the onset of the symptoms, and the fifth from the infliction of the wound—Dr. Woodside, the house surgeon, was called to see him owing to the severity of the respiratory spasms, and, recognizing the imminent danger of asphyxia, administered a few whiffs of chloroform, which had the effect of relieving the respiratory spasm. This had to be frequently repeated during the short period he survived. At 10 A. M. I saw him; he was manifestly sinking, and his pulse was feeble and extremely rapid. The serum injections were continued in the hope that they might, perhaps, help to tide over the acute manifestations of the disease. He died at 4 P. M. the same day, apparently from cardiac failure. The portion of skin and tissue excised was sent at once to Prof. O'Sullivan, of Trinity College, who found in it, along with other microörganisms, almost pure cultures of the bacillus of tetanus. This case bears out the statement made by the authorities of the Pasteur Institute, in Paris, that it is only in cases in which the onset of the symptoms has been somewhat delayed, that satisfactory results have been obtained from the use of the serum in tetanus.

**Dysmenorrhea.**—DR. H. TALLEY recommends a mixture of caffeine, potassium bromide, and tincture of gelsemium as of much value in the treatment of dysmenorrhea. This should be administered for a few days before menstruation.—*Indian Lancet.*—*Clinical Journal.*

**Alkaline Enemata in Obstinate Urticaria.**—In severe and refractory cases of urticaria with involvement of the mucous membranes, the difficulty of affording relief sometimes proves insurmountable. In a case of this kind in an arthritic woman, 56 years of age, which had resisted all the measures which could be brought to bear, including milk diet, immediate relief followed the injection *per rectum* of an enema containing six drachms of bicarbonate of soda with a little liquid extract of opium in a pint of boiled water. The repetition of the treatment brought about a complete cure in two or three days, and as the attack had existed in an aggravated form for upwards of two months, it is only fair to assume that the alkaline injections are entitled to the credit.—*Medical Press and Circular*, September 28, 1898.

**Gelatine as a Hemostatic.**—It is well known that the great inconvenience attending removal of an intranasal vascular tumor is hemorrhage which a plug does not always effectually suppress. Prof. Gaudier, of Lille, utilizes with success the coagulating properties of gelatine as a substitute for the classical plug. When the tumor has been removed, he injects a 1 per cent. solution of gelatine on to the bleeding point, and almost immediately a clot is formed. Each time that the blood appears a new injection is given, and continued thus until the flow has completely ceased. The patient is kept under observation one hour, and if no recurrence has taken place, he is sent home and counseled to remain in bed twenty-four hours, and to have instilled into the nose every two hours the solution of gelatine. In cases where the hemorrhage was very considerable, M. Gaudier used compression first, as the coagulating action of the gelatine would not have time to produce itself.—*Medical Press and Circular*, September 21, 1898.

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## MEDICINE AND PATHOLOGY.

By ALBERT ABRAMS, M.D., Professor of Pathology, Cooper Medical College, San Francisco.

**Bacteriology of Pertussis.**—DR. HENRY KOPLIK considers of the many workers on this subject, only the work of Afanassjeur and Burger. Afanassjeur regards a bacillus as the cause. Czaplewski and Hensel isolated a bacillus, about the size of the influenza bacillus. Koplik collected in Petri dishes during spasms of coughing, small scale-like particles in the mucus which he inoculated on solidified hydrocele fluid. The bacillus has a grayish-white pearly growth on this fluid. On peptone the colonies are irregularly round or oval. It grows in peptone bouillon and on Loeffler's diphtheria serum, on human blood serum, but not on potato. With Loeffler's blood it is [illegible] thinner than the diphtheria bacillus, [illegible] for length. It is stained deeply at the extremities. The poles are rounded or lanceolate; no spores or flagella have yet been found. It [illegible]. In [illegible], there was found a bacterium which is constant and found in no other sputum. It is especially minute. It may be the first definite step in showing that in the sputum of the patient of pertussis lies the danger of the communication of the affection to others.—*Johns-Hopkins Hospital Medical Bulletin*, April, 1896.

**Uric Acid in Disease.**—DR. MATTHEWS conducts us to a proper appreciation of this subject which has assumed such vast importance during the past few years by quoting Bouchard, who divides the causes of disease as follows: First, primary elementary dystrophies or alterations of cell activity that come under our observation in the study of pathological physiology; second, the action of the nervous system either peripheral or central; third, disturbances of nutrition; fourth, infection from living organisms. The great causative factor of disturbed nutrition is the presence in the blood of toxic products of cell growth. Leucomaines are classed as these basic substances which are found in the living tissues, either as the product of fermentative changes other than those of bacteria, or of retrograde metamorphosis. The first investigator was Gautier, who christened them leucomaines, a term derived from the Greek, Leuxoma, signifying white of eggs. Under this name, leucomaine, he included all those basic toxines which are formed in animal tissue during normal life, in contradistinction to the ptomaines or basic products of putrefaction. The distinction between vegetable alkaloids and animal alkaloids, viz., morphine, belladona, caffein, thein, theobromin, is not well defined, and, in fact, there seems to be reason for considering their formation as due to the same causes which bear an ultimate relation to the physiology of the cells and tissues of both kingdoms. So far as the genesis of most of the leucomaines is concerned, Gautier is of the belief that they are being formed continuously in the animal tissues side by side with the formation of urea and carbonic acid, and at the expense of the nitrogenous elements. Bouchard on auto-intoxication, ten years ago, advanced the theory that these bases found in the urine are formed in the intestinal tract, absorbed into the blood, and subsequently eliminated by the kidneys. While this theory may hold good to a certain extent, the origin of true leucomaines cannot be separated from cell metamorphosis, and they are found in tissues and organs in process of disintegration into carbonic acid, ammonia, and water. The leucomaines can be divided into two distinct groups—the uric acid and creatinin groups. The former may be taken as a type of these products of the disintegration of nuclein, the active principle of cell life. The effect on the human economy of leucomaines has been thoroughly tested by Haig, who was impelled to experiment on himself to cure a migraine which he found to be due to their presence in his blood. During the attacks uric acid was found to be in excess in the urine. Migraine of uric acid origin is found associated with other symptoms of uric acid poisoning, viz., slow high tension pulse, cold surface and extremities, mental depression and disinclination for exertion, and scanty urine of high color and specific gravity. This excess of excretion can be controlled by acids and alkalies. An alkaline drink will bring on the high tension pulse, scanty urine, fatigue, while an acid drink will with equal celerity drive them away. Coincident, however, with a disappearance of the symptoms rheumatic pains appear, which lead to the belief that the uric acid is deposited as a foreign body in the tissues when thrown out of the blood by high acidity. All substances, which act as solvents of uric acid, give relief from rheumatism and increase their excretion in the urine; on these facts is based the treatment of gout, rheumatism, and other uric acid conditions. Now, urea is excreted in the urine of a healthy man in the proportion of 3 grains per pound weight. Man, 150 pounds, excretes 525 grains a day, and uric acid in relation of 1 to 36, viz., 35 grains. Daily uric acid in food 1 grain uric acid to 100 grains of urea, 5.25 grains. The total uric acid excreted each day is 20.25 grains. The relation to urea is 1 to 26. Now suppose all the uric acid is not excreted each day, but 2 grains each day is deposited in the tissues and accumulates to such an extent that he is constantly subject to attacks of rheumatism or gout. The relation is presumed to be about 1 to 40 in the body of urea to uric acid, and as the relation excretion is 1 to 33, the difference of 7 grains may be introduced in the form of nitrogenous food without overburdening the organs and blood. Now the excess of uric acid introduced in the form of meats, wine, beer, and coffee, is stored up in tissues as an irritant, and may be taken up into the blood stream whenever its alkalinity will permit It is found that the daily excretion of uric acid is most in the early morning hours, from 7 to 9 A. M., when one feels most sluggish. After brisk exercise the blood becomes acid from oxidation of tissue, so that uric acid is thrown out of the circulation, and often stiffness and rheumatism come on as a result of the local deposit of the cast-off uric acid. The nitrites and all diuretics produce their action by clearing the blood of uric acid and allowing the capillaries to dilate for the elimination of the urine and water. In the same way a congestion of the internal organs, such as asthma, can be relieved by a nitrite which dilates the peripheral vessels by clearing up the uric acid. The two drugs which are known to produce soluble compounds of uric acid are calomel and the salicylates. They will not only clear up the excess in the blood, but will eliminate it from the system. They are indicated in all cases of disturbed nutrition due to an excess of the uric acid group of leucomaines in the blood and tissues of the body. The exhilarating effect of the drugs such as the coal tar derivatives, morphine and cocaine, produce their effect solely by eliminating the uric acid from the circulation, permitting the dilatation of the capillaries and relieving the congestion of the circulation. The reaction and depression after a debauch and excesses in the use of these drugs, causes the sluggish torpor of the blood and brain, and a craving for a repeated dose of the drug. This desire is satisfied by an acid drink which, by raising the acidity of the blood, precipitates the excess of uric acid, and a complete cure can be accomplished by the administration of the salicylates which remove the uric acid a soluble compound. The blood, which is then free from the poisons, absorbs more oxyhemoglobin, and rallies from its state of anemia. Most gratifying results in the treatment of bodily and mental fatigue are had by rest cure and temperance in the use of meats and high wines and coffee and teas. Remember not to raise the proportion of excretion of uric acid to urea above 1 to 33, and all the depressing effects of an excess of uric acid in the blood will vanish. Epilepsy and acute dyspepsia have the same clinical history of storms of uric acid in the blood and contracted arterioles, with scanty secretion of all the glands of digestion, slow-bounding pulse and general depression. The failure of digestion and absorption causes an increased alkalinity of the blood with consequent absorption of more uric acid, and thus the one acts on the other to cause chronic dyspepsia and a never-ending chain of toxic symptoms.—*Medical Fortnightly.*

**Mixed Infection in Pulmonary Tuberculosis.**—DR. SCHABAD understands by this the association of the pyogenic organisms with the tubercle bacilli in the lung alveoli, or, at any rate, in the capillary tubes. The presence of the pyogenic cocci in the sputa do not suffice to establish mixed infection, inasmuch as one cannot say that the microörganisms are derived from the lungs. Less often than the streptococcic mixed infection, is the mixed infection of lung tuberculosis with the tetragenus and the pneumococcus. The clinical course of such cases of mixed infection is one of sepsis, and the type of the fever is remittent or intermittent. A normal temperature in lung tuberculosis characterizes the uncomplicated disease. Mixed infection with normal temperature is probable.—*Therapeutische Monatshefte*, June, 1898.

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## MENTAL DISEASES AND MEDICAL JURISPRUDENCE.

By A. W. HOISHOLT, M.D., Assistant Physician, State Asylum for Insane, Stockton, Cal.

**Surgical Treatment of Epilepsy.**—DR. ANDREW J. MCCOSH, of the College of Physicians and Surgeons, New York, in his report of the result of surgical treatment in 14 cases of epilepsy, says that operation is, generally speaking, indicated (1) In all cases of focal or partial epilepsy (Jacksonianism) where the convulsive movements or paralyses are limited to a particular group of muscles. (2) In all cases where the epilepsy, be it general or partial, has followed, and is apparently caused by a depression in the skull, the result of a traumatism. (3) In many cases where a severe head-injury—even though there be no external evidence—has been followed by a partial epilepsy, and where the "signal symptom" indicates a definite area in the brain. The final result in the 14 cases he reports, judged a year or more after the performance of the operation, during which interval there was an absence of manifestations of cerebral disturbance, is as follows: cured, 3; improved, 5; unimproved, 4; unknown, 2; died, 0; total 14. According to this 3 patients out of 12 have been cured by operation, or 25 per cent. If, however, the limit of time, when one can with safety declare a patient to be cured, be placed at three years, there remained but 2 patients who could be regarded as permanently cured, a proportion of 16.4 per cent.—*American Journal of Medical Sciences*, May, 1898

**A Peculiar Case of Psychic Blindness.**—DR. R. LÉPINE reports a very rare case of psychic blindness in a man 33 years of age, who presented symptoms of general paralysis. There was no agraphia or aphasia and he was able to read, but there was a complete inability to recognize by means of vision and other senses, persons and objects with which the patient was not familiar prior to his illness. The visual field was irregularly contracted, apparently hemiopic; the central vision was good and color perception intact. While he could write, he appeared to have completely lost his former ability to draw or copy drawings. *Revue de Méd.—Centralblatt f. innere Medicin.*

**Expert Testimony.**—MR. EALLAS SANDERS of the Philadelphia Bar, read a paper on this subject before the Philadelphia County Medical Society, May 25, 1895, in which he says: Witnesses, except experts, who are produced in court and examined, are not allowed to give their opinions on their beliefs. They are merely produced in court to testify as to the facts that have come under their actual knowledge, but an expert can give the jury and the court the benefit of his opinion and of his belief. Therefore physicians and surgeons when produced to testify in court stand on a different plane from ordinary witnesses. The difficulty that I have seen in expert testimony of the medical profession is that it is hard to make the jury realize the standing of the men who are testifying and the thoroughness with which some have followed their profession as against others who have not been so careful. In the presentation of a case by doctors as expert witnesses on one side and on the other side, the standing, the ability and the thoroughness of each man should, in some way or other, be shown, so that the jury could realize whose opinion should have the greatest weight. English judges probably present this more clearly and more emphatically to the jury than our judges do. The criticism that I have to make of medical experts is that they are inclined to testify that a possibility is a probability; that is to say, when a man has been injured, there is a possibility that he may be permanently injured from the accident, or that he may die from it; but the expert, becoming a little over-zealous, or too much interested in the cause which he has at heart, will state to the jury that a man probably is permanently injured or probably may die from his injuries, when the history of such case will probably show that he will get well, and probably not die, but there was a possibility of his being permanently injured and a possibility of his death. According to the Act of 1895 (Pennsylvania), a physician cannot be compelled to testify as an expert. The technical terms in the medical profession are much more numerous than in the legal profession, and they are very difficult, even to a lawyer who has paid some little attention to accidents and medical matter, to follow; therefore, it is much harder for a jury to follow these terms, and it is of importance that medical expert testimony shall be delivered in careful, plain English, that every man on the jury, whether he is a bricklayer, or whether he is a coachman, or whether he is a merchant, or whether he is a professor in college, may understand it. That has as much weight in the success of a case, in the view the physician gives, as almost anything else.—*Medical Review of Reviews.*

**Proposed Law Forbidding Public Demonstrations of Hypnotism.**—Dr. Croq, Jr., reports the findings of a committee of experts composed of Drs. Delboeuf, DeRode, and himself, who had been appointed by the Courts of Belgium to determine the question of simulated or real hypnotism in the public demonstrations of one Donato, who claimed that they were not really hypnotic. The experts made Donato repeat before them the experiments which he had demonstrated before the public; they also repeated these experiments themselves, and found that the subjects were perfectly awake during the whole time of the experiments. In discussing the law in vogue in Belgium Dr. Croq arrives at the following conclusions: (1) There are dangers connected with hypnotism which involve society as well as the subjects. (2) It is absolutely necessary that the law should reduce these dangers to a minimum. (3) It is possible to simulate all the experiments of hypnotism. (4) In training an individual one can succeed in developing in him a state which has all the appearance of the waking state, and yet reduce the individual to a condition of complete automatism. (5) It is sometimes absolutely impossible for the most experienced expert to say whether or not an individual is under hypnotic influence. (6) The public demonstration of simulated hypnotism present absolutely the same danger as do the public séances of actual hypnotism. (7) In order to entirely prevent evil results, the law must forbid not only the demonstrations of real, but those of simulated hyptonism.—*Journal de Neurologie et d'Hypnologie—Journal of Nervous and Mental Disease.*

## FORMULÆ.

By H. E. Sanderson, Ph.B., M.D., Assistant Physician State Asylum for Insane, Stockton, Cal.

**To Cure Itch in Two Hours:**

| | |
|---|---|
| Sulphur | ℥iii |
| Quicklime | ℥vi |
| Water | O ii |

Boil till combined, then allow to cool and settle; decant and keep hermetically sealed.

Sig.—Rub with soft soap for half hour, then take tepid bath for half hour. Then apply solution and leave on for quarter hour, then take bath.—*Medical Age.—Cincinnati Lancet-Clinic.*

**Pernio:**

| | |
|---|---|
| Ichthyol | 1.0–5.0 |
| Resorcin | 1.0–3.0 |
| Adipis lanæ | 25.0 |
| Olei olivæ | 10.0 |
| Aquæ distilat. q s. *ad* | 50 0 |

Sig.—Apply at night, with good rubbing. Before using each day, bathe affected part 1 to 3 times (10 to 15 minutes) in hot water, and then with alcohol (if not ulcerated).—*Therap. Rev. der Allg. med. Zeitz.—New York Medicin. Monatschrift.*

**Night Sweats of Phthisis:**

| | |
|---|---|
| Plumbi acetat. | gr. x |
| Ext. gentian. | q.s. |

ft. chart. No. 12.

Sig.—3 to 5 powders a day.—*Medical News.*

**Sexual Atony in Women:**

| | |
|---|---|
| Ext. cannab. indicæ, | |
| Ext. nucis vomicæ .āā | gr. xxx |
| Aq. ext. aloes | gr. vii |

Div. in pil. No. 100.

Sig.—One three times a day.—*Jour. de Med. de Paris.—Medical Progress.*

**Bronchitis with Excessive Secretion:**

| | |
|---|---|
| Acid. benzoic | gr. xv |
| Acid tannic. | gr. xv |
| Morphin. hydrochlorat. | gr. i.—M. |

Sig.—One every 2 hours.—*Medical Progress*

**Tonsilitis.**—In chronic cases with acute exacerbations, apply the followlowing, with a brush:

| | |
|---|---|
| Tinct aconit. rad. | ʒss |
| Tinct. belladon. | ʒi |
| Tinct. ferri chlor | ʒii |
| Tinct. iodi comp. | ʒiiss |
| Glycerin q.s. *ad* | ℥i |

—*Virginia Medical Semi-Monthly.—Medical Bulletin.*

**Prostatitis:**

| | |
|---|---|
| Ichthyol | gr. v–xii |
| Ext. belladon. | 0.25 |
| Cacao butter | q. s. |

Sig.—Use 2 or 3 such suppositories daily.—*Centralblatt f. d. ges. Ther.—New York Medical Journal.*

## METEOROLOGY.

**Summary for September, 1898.**—*Temperature.*—The mean temperature of the State for September, 1898, was 69.2°, a departure from the normal of − 1.3°; the highest monthly mean was 97.9°, at Volcano Springs; the lowest, 50.5°, at Boca and Snedding's. The maximum temperature was 117°, at Volcano Springs, on the 8th and 9th. The minimum, 14°, at Snedding's, on the 3d. The absolute range for the State was 103°. The greatest monthly range was 76°, at Snedding's; the least, 17°, at Point Lobos

*Rainfall.*—The normal precipitation for the State for September is 0.35 inches; the average for September, 1898, was 0.66 inches, a departure from the normal +.31 inches. The greatest monthly precipitation was 4.09 inches, at Las Fuentes; the least, nothing, at many places.

*Wind.*—The prevailing direction of wind was west.—W. H. Hammon, Forecast Official and Station Director.

## California—Tabular Statement for September, 1898.

| STATIONS. | Temperature. | | | | | | Rainfall. | | Mean Relative Humidity | Weather. | | | Wind. | Furnished by— |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Highest | Lowest | Mean Highest | Mean Lowest | Mean Daily Range | No. of Days Rain Fell | Total Rainfall | | No. of Clear Days | No. of Fair Days | No. of Cloudy Days | Prevailing Direction. | |
| Auburn ..........Cal. | 69.2 | 98 | 54 | ------ | ------ | ------ | 1 | 0.26 | ------ | 24 | 0 | 6 | S. | Southern Pacific Company. |
| Berkeley......... " | 58.5 | 82 | 51 | ------ | ------ | ------ | 3 | 0.93 | ------ | 10 | 11 | 9 | S. | Obs. University of California. |
| Colfax............ " | 66.6 | 92 | 48 | ------ | ------ | ------ | 2 | 0 36 | ------ | 21 | 2 | 7 | S. | Southern Pacific Company. |
| Coronado........ " | 70.9 | 86 | 64 | ------ | ------ | ------ | ? | ? | ------ | ---- | ---- | ---- | ------ | H. A. Masac. |
| Eureka............ " | 56.0 | 70 | 47 | 60.0 | 52.0 | ------ | 6 | 1.48 | 86 0 | 6 | 10 | 14 | N.W. | Weather Bureau Dept. Agr. |
| Fresno........... " | 73.0 | 105 | 50 | 89.0 | 58.0 | ------ | 1 | 1.12 | 41.0 | 26 | 0 | 4 | N.W. | " " " |
| Keeler ............ " | 77.4 | 101 | 58 | ------ | ------ | ------ | 0 | T | ------ | 20 | 8 | 2 | S. | California and Nevada R. R. |
| Los Angeles.... " | 71.0 | 99 | 48 | 84.0 | 58.0 | ------ | 2 | 0 02 | 68.0 | 19 | 10 | 1 | W. | U. S. Weather Bureau. |
| Monterey ....... " | 63.3 | 81 | 50 | ------ | ------ | ------ | 2 | 0.79 | ------ | 24 | 0 | 6 | S | Southern Pacific Company. |
| Napa.............. " | 65 0 | 102 | 42 | ------ | ------ | ------ | 3 | 0.59 | ------ | 13 | 13 | 4 | S. | Station Napa Insane Asylum. |
| Oakland ......... " | 60.7 | 81 | 50 | ------ | ------ | ------ | 3 | 1.16 | ------ | 9 | 14 | 7 | W. | Chabot Observatory. |
| Paso Robles.... " | 65.8 | 108 | 33 | ------ | ------ | ------ | 1 | 0.10 | ------ | 23 | 5 | 2 | N.W. | Agr. Experimental Station. |
| Red Bluff....... " | 73.0 | 102 | 52 | 86 0 | 59.0 | 28 0 | 4 | 0.45 | 39.0 | 21 | 7 | 2 | S.E. | Weather Bureau Dept. Agr. |
| Sacramento..... " | 69.0 | 98 | 45 | 84.0 | 54.0 | 30.0 | 1 | 0.36 | 54.0 | 24 | 2 | 4 | S.W. | " " " |
| San Bernardino " | 72.6 | 106 | 44 | ------ | ------ | ------ | ? | ? | ------ | 23 | 7 | 0 | W. | A. K. Johnson, M. D. |
| San Diego....... " | 68.0 | 91 | 56 | 74 0 | 63.0 | ------ | 2 | 0.07 | 77.0 | 26 | 2 | 2 | N.W. | Weather Bureau Dept. Agr. |
| San Francisco.. " | 59.0 | 80 | 50 | ------ | ------ | ------ | 3 | 1.06 | ------ | 10 | 15 | 5 | W. | " " " |
| Santa Barbara.. " | 66 0 | 91 | 52 | ------ | ------ | ------ | 3 | 3.17 | ------ | 20 | 6 | 4 | E. | Hugh D. Vail. |
| Santa Cruz...... " | 62.8 | 101 | 42 | ------ | ------ | ------ | 2 | 2.21 | ------ | 18 | 8 | 4 | S.W. | Ralph Springer. |
| Yuma..........A. T. | 86.6 | 110 | 63 | 102.5 | 70.9 | 31.6 | 0 | 0.00 | 43 8 | 29 | 1 | 0 | S.W. | Weather Bureau Dept. Agr. |

Blank (----) indicates data missing.

Occidental Medical Times.

COMMUNICATIONS are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

SACRAMENTO: NOVEMBER, 1898.

## SAN JOAQUIN VALLEY MEDICAL SOCIETY.

The third semi-annual meeting of this prosperous Society, which was held at Hanford, was an unusually interesting one, there being a large and representative attendance, not only of physicians from that city and its immediate vicinity, but from all quarters of the San Joaquin valley. The literary material, while not so abundant as usual, was sufficient to fully occupy the time of the Society. An interesting feature of the meeting was the large number of young members present, all of whom evinced a marked interest, not only in the discussion of papers presented, but also in the future welfare of the Society, which bids fair to rival any similar medical organization in the State. Judging from the rapid strides that have been made during the short period of its existence, and from the large number of new members who join its ranks at every session, this prediction will soon be realized. A most interesting and satisfactory feature is the fraternal feeling, the spirit of harmony and the high sense of professional duty that pervades this organization, and which, more than anything else, will tend to the permanent betterment of the profession in that region.

The President, DR. T. E. TAGGART, of Bakersfield, in a few well chosen remarks, reviewed the benefits to be derived from medical organization and from the free discussion of papers presented at the meetings. He dwelt particularly on the aims and scope of the Society, and urged a lively interest on the part of members, that its purpose might be fulfilled. After some discussion it was decided to hold the next meeting at Fresno. A full report of the proceedings will appear in our next issue.

At the close of the evening session a banquet was tendered the visitors by the local profession at the Hotel Artesia. This feature was one of unusual interest from a social standpoint. In addition to the large number of medical men in attendance, several members of the legal profession, and some of Hanford's most prominent citizens were also present. **Dr. L. B. Felton**, of Hanford, who acted as toastmaster, at the close of the festivities, was given a vote of thanks for the very creditable manner in which he acquitted himself in that capacity.

## NOTES.

### California Northern District Medical Society.

The eighth annual meeting of the California Northern District Medical Society will be held in Unity Hall, Foresters' Building, I street, between 7th and 8th streets, Sacramento, on Tuesday, November 15, 1898. There will be two sessions—a morning session, commencing at 9:30 A. M., and an afternoon session, at 2:30 P. M. The evening will be devoted to a banquet, given to the visitors by the Sacramento Society for Medical Improvement, at the Maison Faure. The following are the titles of papers, with the names of their authors, and the names of those who will open the discussions: Annual Address by the President, T. W. Huntington, of Sacramento, "The Benefits of Medical Organization." "The Recuperative Power of Nature in Disease," G. L. Simmons, Sacramento; W. E. Bates, Davisville. "Congenital Myxedema and Other Diseases of the Thyroid Gland," B. M. Gill, Dunsmuir; H D'Arcy Power, Sacramento. "State Requirements for Admission to the Practice of Medicine," A. M. Henderson, Sacramento; J. H. Parkinson, Sacramento. "The Medical and Surgical Treatment of Peritonitis," W. A. Briggs, Sacramento; G. A White, Sacramento. "Two Cases of Rupture of the Heart, with Demonstration of Specimens," A. W. Hoisholt, Stockton; H. D. Lawhead, Woodland. "The New Materia Medica and the Modern Doctor," H. D'Arcy Power, Sacramento; O. Stansbury, Chico. "Should Vaccination be Compulsory?" David Powell, Marysville; John Fife, Red Bluff.

## SOCIETY PROCEEDINGS.

### SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

*Regular Meeting, July 19, 1898.*

The President, F. R. WAGGONER, M D., in the Chair.

**Dr. F. Gundrum** reported a case of "Eccentric Dilatation of the Greater Magnitude."

**Dr. G. L. Simmons**: In the case just reported I will say that the author has had a great deal more patience than I would have had. As to the mode of procedure pursued I have no criticism to offer. In regard to the use of a remedy in fermentative processes, I think I have found the best success with sulphite of soda. I think I have tried what he has used in this case. I have often been astonished at the rapidity of action of that compound—satisfactory action afterwards.

**Dr. F. Gundrum**: What is particularly peculiar about this case is that the stomach retracted after such extensive dilatation, which Highfield states does not take place after enormous dilatation, but it does get smaller with treatment.

**Dr. L. A Harcourt**: It occurred to me while the author was speaking about downward pressure, that perhaps an elastic bandage, making a constantly increased pressure might have a tendency to counteract the dilatation of the stomach.

**Dr F. Gundrum** also read a paper on "Hydrotherapy."

**Dr. Thos. Ross**: I think hydropathy is a method of treating disease that is too much neglected by us generally. As regards the physiologic action of water, the Doctor has stated that in his paper so fully that it will not be necessary to say anything further in that direction. He has confined his paper to the external application of water in the treatment of disease. I have seen it used, especially in typhoid fever, with markedly beneficial results. There is no doubt in the world that this form of treatment has reduced the mortality very largely indeed—5 or 6 per cent. The use of water in pneumonia, I think, has been followed with most beneficial results It is the general opinion that water is fattening; I would like to inquire whether there is anything in that? Do fat people drink water, because they are fat?

**Dr. G. L Simmons**: I am, and have been, a great water drinker all my life. I believe I can endorse nearly everything the author has mentioned as regards the use of water in medical practice I certainly have no objection or criticism to make, and I believe one reason why we have not adopted it more, in general practice, is because of its inconvenience and, more or less, of a prejudice which the regular profession has against hydrotherapy. In thinking over the matter, of late, since the introduction of the ice-coil, I have about come to the conclusion that it is the cold rather than the use of the fluid—simply cold—that prevents the multiplication of typhoid germs, thus reducing the temperature. I was a good deal struck with the author's experience with regard to the use of water in the rectum, in certain conditions that he named. My own practice, in that line, has been more, of late, in connection with the use of cold and rectal dilatants. I have sets of dilators into which I introduce the cold agent, and have been astonished at the good effect from cold applied in that way.

**Dr. W. E Briggs**: I am very glad that this subject has been brought to our attention as it is one which is very much neglected by the medical profession. I think that medical men should employ every means in treating their cases, that they feel would be a benefit, and cast aside all prejudice, considering only that which is best for the recovery of their patients. A certain proportion of the public believe in medicine, and when you suggest a simple remedy they very often become impressed with the idea that you are not doing anything to help them, simply because you do not give them medicine. This is an almost daily experience of mine. To-day I told a patient to go home and apply ice-water to his eye, telling him how to use it, and when he got to the door he inquired if it would not be better to apply tea leaves. I told him the best thing to use was cold water, that it was more efficient than anything else. Most people apply Pond's extract. As a local application ice water would have just as good an effect, if not better, and I have discouraged the application of such remedies. I do not know anything about the treatment of disease, in general, by water, as has been spoken of to-night, but I do approve of the simple use of cold water and, in certain conditions, of very hot water, and I find that it does better than any local treatment that one can apply.

**Dr. G. A. White**: Water has a wide range of application, not only in medicine but in surgery; there we find a wide field for the use of water We must not overlook the value of hot water. Hot baths or hot packs or simple baths, are applicable to many cases. Hot water is also of great value in the treatment of gastric troubles, as reported by the author in his first paper. It is very beneficial in the early stages of indigestion, as a morning drink. I have often times directed the drinking of a pint of hot water before breakfast. It washes out the stomach, carrying everything down into the intestinal tract. It also acts as a direct stimulant to the stomach. I do not know that anyone has objected to the use of water in the practice of medicine. We all use it in fever cases and I do not remember an instance in which it resulted disastrously. Hot water is one of our best hemostatic agents for controlling capillary hemorrhages. It is the chief factor in the formation of fat, in fleshy people. Freely used it flushes the system generally, cleansing the system of effete material.

Dr. L. A. Harcourt: Which would be preferable, hot or cold, in a case of orchitis, and which is most likely to reduce swelling?

Dr. White: It would largely depend on the individual; I use both, and find that very hot water will relieve pain, when cold will produce shock. It is a matter of judgment to determine which is best. If we reach a point where we have suppuration a few thrusts of the bistoury will do more than water. Nitrate of silver is the best thing in orchitis.

Dr. A. M. Henderson: The use of water for irrigation in one disease, cholera infantum in infants, is very beneficial. In the first place we wash out the stomach and bowels, and if the patient be anemic and suffering from considerable shock, give it an injection of salt solution, hypodermically. This plan is advocated by men who are treating infants, largely.

Dr. T. W. Huntington: I wish to take exception to the use of the term hydropathy. I know of no excuse for the use of any word ending in 'pathy. Such words have no derivation and little meaning. As a general proposition I think such words in medical literature are objectionable. Water as a therapeutic agent should be used scientifically as all other accepted remedies should be used. With regard to the use of cold water as applied in the Brand bath, directly to the body of the patient, I cannot believe that it is wholly without deleterious effects. The sudden shock and the rapid change from heat to cold seem to me objectionable for apparent reasons. I greatly prefer the application of dry cold as exhibited in the use of the ice coil. Reliable statistics show a mortality of 12 per cent. in typhoid fever attending the use of the Brand bath. I regard this death rate as entirely too high, and in my opinion the intelligent and skilful use of dry cold will give far better results.

Dr. D. J. Prather: I object to the word hydropathy. I believe the way in which cold does the most good is in its inhibitory action on germ life. I agree with Dr. Huntington, that cold, moist or dry, is an agent we should use like any other agent, and we cannot use it in the treatment of fever, exclusively, to a great advantage, but I think it is a valuable agent, such as strychnine, for keeping up the organism. I am very fond of it, and have used it in typhomalarial fever.

Dr. H L. Nichols: Water is one of the gifts from the Great Father, and as a foot bath and that sort of thing, I believe it is an excellent adjunct in the treatment of disease; still I would not count it as a medicine I have always used both hot and cold baths; they seem to be quieting. Speaking of the application of cold, it is not the water itself, through the coil, it is the temperature. Cold milk run through the coil would have the same effect. Hot water in stomach trouble has a stimulating effect. I do not believe in the fattening qualities of water. I think fat people drink more than others owing to the desire created by the burning up of their fatty matter. I do not believe that water does fatten. I have in mind a patient who came under my observation a number of years ago who got into the habit of drinking water to a considerable extent, filling up his stomach with large quantities of water, and the habit grew until he felt it was necessary to do so, and found it quite hard to break it up. I believe a person should use as much as they naturally desire, but I do not think it is good to fill up with cold water. I think it is injurious.

Dr. L. A. Harcourt: With regard to shock, it seems to me that the author used the word shock metaphorically. I do not believe when he spoke of the life-giving shock he meant it in the sense in which it is construed by some members. In connection with that we may say that cold water or cold baths or cold ice water has two effects: First, it reduces temperature, and secondly, it has a stimulating effect, and there lies its usefulness. It is the sudden stimulation in the application of the bath that is beneficial to the patient. The Brand method, I believe, required that whenever the temperature in the rectum reached 39° C. or 102.2° F., no cold bath should be given for three hours. As a result of a modification of the Brand treatment, in the German Hospital in Philadelphia, there has been published a tabulated statement showing that during 1896–7, the mortality has been greatly reduced. When the temperature in the axilla or mouth reaches 101.4°, they give the bath. By the Brand system the patient is lifted from the bed into the bath. That system has been modified in Philadelphia, in this: The patients are allowed to get up and walk to the bath-tub, assisted by the nurse, and the result shows that the mortality during the last two years was about 7 per cent., and in 1897, 5 and a fraction per cent. It is claimed that this treatment has a beneficial effect in two ways. It keeps up constant stimulation, and also brings into play, muscular action. When a patient lies 24 or 36 days in any position there is danger of pneumonia or broncho-pneumonia. In the milder cases, the bath is placed at one end of the bed, and the patient is induced to walk that distance, and in the severe cases they are placed close to the bath. When Dr. Gundrum spoke of shock he did not mean it in the sense as from an injury, but from the sprinkling of the water on the naked surface. Force is the next point. Of course he did not mean that any new force was generated. The application of the cold has the effect of arousing force, and not in the sense that Dr. Huntington implied. If the entire weight of the body consists of 75 per cent. of water, then it seems that the usefulness of a water bath internally and externally ought to be manifest to any thoughtful person. I believe it is quite conceivable that water is fattening, notwithstanding Dr. Nichols' claims to the contrary.

DR. GUNDRUM: I would like to say in reply to Dr. Simmons, that cold retards the development of germs, and it retards their incubation, as in diphtheria. It is the result of their action when they come to the full stage of development, by the toxines they produce, that does the damage. In regard to producing fat in the human subject, water is not fattening. You can reduce fat very rapidly with lean meat and plenty of water—six pints a day, or more. I have tried it. Fat people are poor oxidizers, and in place of burning up material they lay it away in the shape of fat, and whenever you find a subnormal temperature it is in fat people. Consequently oxidation is incomplete and the system seems to crave water to wash out the uric acid from incomplete oxidation. With regard to the application of heat or cold in hemorrhage, it should be remembered that heat contracts connective tissue, and where you can get it sufficiently hot and apply it sufficiently long, it is always best to reduce hemorrhage, because the fibrous tissue holds longer than the muscular tissue. I use the word "hydropathy" because it is most familiar. It is used by American writers, especially Hare, of Philadelphia, and also by scientific investigators in Europe. It is becoming more and more recognized that it is not the effect of the bath by cold that does the good, as by the shock on the system which produces an increased oxidation of the toxines in the system and this tends to eliminate them. As regards increased force, or power, it does create force, a dynamic force. Winternitz claims there is a current of nerve force and he claims there is a reverse current produced. Let a person stand still and touch the hand with a cold agent and see whether or not force is produced. There is a thrill sent back to the centers and motion is produced. That the blood cells are increased by the use of water there is no question. It has been proven by the best men in our profession, in this country and in Europe. I did not bring this subject up to-night as a cure-all, but for the consideration of the general practitioner, for, as in the case reported, there are often cases where medicine will not do any good, and the more medicine a man takes the worse he is off. You can, very often, by cold sponging, cure your patient when medicine has failed. Winternitz has a large establishment twenty miles from Vienna. He takes all kinds of diseases and cures them with water, in various shapes and conditions.

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## *Regular Meeting, August 16, 1898.*

H. L. NICHOLS, M.D., in the Chair.

**The Uses of Alcohol.**—DR. D. L. MCLEAN read a paper upon this subject.

DR. W. A. BRIGGS: I use alcohol probably less than most physicians. I believe it to be beneficial in certain cases of dyspepsia of atonic type, for, although we know that alcohol theoretically opposes the digestive process, yet clinically it is found not to do so. It is valuable in a proportion of typhoid cases, particularly in our modern methods of surface heat abstraction. Opinions of such weight that they must be seriously considered, however, positively discountenance its use in typhoid. In its extensive use in croupous pneumonia I have no confidence, nor greatly in any other treatment that has been devised for that disease. The application of cold early in the course of the disease and possibly the use of the antitoxin, seem most promising to me at present

**Dr. H. W. Strader**: Further than the slight use of beer, I have no occasion for the use of alcohol in my practice. In typhoid, it produces delirium and tympanites. If a stimulant is needed, strychnine is better, or nitroglycerine. I have recently given $\frac{1}{5}$ gr. of strychnine, in two doses, within an hour, with good result I never prescribe brandy, whisky or alcohol

**Dr. W. J. Hanna**: In the collapse of surgical shock injections of alcoholic preparations in connection with injections of normal salt solution are certainly valuable In the treatment of dipththeria I formerly always prescribed alcohol with iron and chlorate of potash

**Dr. G. L. Simmons**: Alcohol is a desirable drug in conditions of collapse, in connection with nitroglycerine, and the other customary drugs used in such cases. I have prescribed it with good results in deficient milk secretion, and in the dyspepsia—malnutrition of the old In all cases the likelihood of establishing a habit is to be carefully considered. I have seen milk punch, prescribed to a nursing mother, result in intemperance and divorce.

**Dr. H. D'Arcy Power**: Alcohol is to be considered purely as a drug, having certain physiological and therapeutic properties. With its ethical side we have not much to do. While not, in conditions of health, a food, it becomes so in disease. It has been said that it is not a material heat producer. This is a mistake. The breaking up of the molecule $C_{2}1 + 5\,HO$ into $CO_2 + H_2O$, which is what takes place in the system, is so distinctively productive of heat that this is really the most important effect of alcohol. Its great use is in the conditions of flagging heart and low blood pressure, with a tendency to dicrotic pulse such as we find in the exhaustion of typhoid. Early in such cases it is not indicated, but when the conditions described are on, it will give more satisfaction than anything else. Moreover, a glass of whisky is considerably safer than $\frac{1}{5}$ gr of strychnine within an hour. Alcohol is, on the other hand, contraindicated in conditions of high blood pressure such as those of arterio-fibrosis and gout.

**Dr. L. A. Harcourt**: While previously absolutely opposed to the use of alcohol, I have more lately come to use it in certain cases, such as those described, and also in protracted and exhausting labor, where the stimulation of a glass of some alcoholic beverage will often support the woman to a successful conclusion. The contraction of a habit is much to be feared.

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## *Regular Meeting, September 27, 1898.*

H. L. Nichols, M.D., in the Chair.

**New Members.**—D. J Prather, M D., and G. W. Dufficy, M.D., were duly elected members of the Society

**Dr W. A Briggs** read a paper entitled "Temperature in Enteric Fever" [published at page 456], and exhibited an apparatus for use with the Leiter coil controling the temperature.

**Dr. T. W. Huntington**: I want to make a remark here to-night, regarding which I think subsequent history will bear me out and which I think will be agreed to by some here, although the statement may be accepted at first with some misgiving It is this: The paper presented to-night is the first and only systematic, rational disquisition on the subject of typhoid fever I have heard or read in the past twenty-five years. I have listened to the lectures of very wise men, by men who are considered authors in all lands, the most eminent that this or any other country affords, and I have to say that this is the first and only rational disquisition on the subject I have ever listened to. I want to say, also, that I have myself outlined something of the same sort previously, and I did it at a time when I was criticized, and the statements were not taken without a very large grain of salt. You may search the literature on this subject through, and I do not believe that you will find anything that begins to be as clear or more positive than the truth that has been asserted here to-night. There are two things to be carefully watched in the treatment of typhoid fever, namely, the fever and the nutrition of the patient. Other things are necessary and useful in the conduct of a case of typhoid fever, but the two main points to be looked after closely are fever and nutrition—fever first. While I do not go quite so far as Dr. Briggs, as regards the use of chemical antipyretics, and while I do not fully indorse the use of the very large doses of phenacetin, found useful in the practice of the author, I am not prepared to controvert them. Summing up the whole matter, you are placed in the position of putting out a conflagration. You have to hold your attendant absolutely responsible for the temperature, as shown by the chart. In enumerating the different advantages as regards the condition of the patient, the author omitted a very important point, and that is the maintenance of the muscular activity of your patient, in a condition of perfect nutrition. Only yesterday I was called to the bedside of a patient who has been suffering from this disease for four weeks and who is still tolerably sick, and having occasion to uncover his lower extremities I was impressed with his condition. He had not lost any flesh—having drank from one to three quarts of nourishment daily. This condition you cannot get with any other form of treatment. With regard to complications, I do not believe there should be any complication in typhoid fever. In a thousand cases treated from the incipiency of the disease in enteric fever, I should say that I do not believe you will have any trouble from complications if you keep the temperature down the greater portion of the day to the 100° point. The great thing is to have your range of fever at 100, 101, and 102° F. Some one has called attention to the fact that a man's fat begins to melt at 102° F. I say to my nurses "look out that you do not melt your patients; I hold you responsible for it," and I believe the results obtained will bear me out in that statement. I do not believe we should have a bed-sore in typhoid fever, and if a bed-sore occurs in one of my cases I know there is something wrong. I do not agree with the author in another point, and that is regarding the size of the coil. If I should use a large coil, I should prefer to have the hose of larger caliber. I have, in several instances, in a coil with hose larger than this, found the return flow perceptibly warm. I believe you should double the size of the hose, as, otherwise, in the case of a stout man with a large blood flow, he will heat the water to a great extent, which is very detrimental. Not long ago, when at the bedside of a typhoid patient, I saw there was something wrong—I noticed that he was not in his usual happy frame of mind. As a matter of fact my enteric patients keep in a very good frame of mind. I said to the patient, "What is the trouble with you to-day?" He replied, "My nurse let the ice water run out of my coil last night." I said I was glad of it, from the fact that it was a good illustration of the value of the coil. I said, "Suppose you hadn't had a coil at all, where would you have been?" Instead of grumbling about the coil they are earnest in their desire to have it constantly applied.

Dr. G. L. Simmons: The paper is one of great merit, and is original in many of its features. There is one point in connection with the form of typhoid that we have had during the past season, which I am sure requires a good deal of thought, that is, in connection with the type of the disease. A gentleman connected with the State government sent me a printed blank, one of which I presume was sent to all the members of our Society, with the request that I give a statement as to the number of continued or typhoid cases that I had met with during the past season, and the result of treatment. I looked over the cases that I had had since last February—and I was ill for nearly two months, during which time I did nothing—but I found a record of 60 cases, with but one death. I desire to say that, of those 60 cases, there was not one that had the characteristic symptoms of the form of typhoid I have seen in my earlier years of practice, or that I have seen in other localities. The fever was continued, but the evidence of rose spots, enteric ulcerations, subsultus, delirium, or hemorrhage—in most of them—were entirely absent, and while I believe that these cases are, and have been typhoid, I do not believe that the treatment that has been instituted during the past season would probably be a fair criterion of what might be necessary, at other times, to combat the [illegible] fever. My treatment has been bathing. I have not used the coil, but under the ordinary hydropathic treatment I have been able to, in connection with the coal-tar products, keep the temperature down to 100° and 101° F. I can see a great many advantages in connection with the Leiter coil which are evident now to all of us, and if I were to continue to practise I would adopt it With all due credit to Dr Briggs' paper, I believe that many of the ideas that he has brought forward to-night are those of the hydropaths of nearly fifty years ago. I remember the same line of argument, the same administration, except that the cold was then applied in the form of ice, and very often in connection with poultices, that is, a poultice of flaxseed large enough to cover the abdomen, having pieces of ice stuck all over it—oilcloth being used to prevent the patient from getting wet. It was not a very elegant form of treatment, but it was, nevertheless, effective. They did not have thermometers in those days and therefore had to be guided by symptoms, but their cases did well. With regard to the administration of phenacetin, I have used it as much as I have some of the other coal-tar products and I think I have obtained about the same results with those preparations which were not objectionable. In regard to internal asepsis, it is very important, but in connection with the use of astringents, except, possibly, to avoid hemorrhages, I am somewhat in doubt. I believe those cases do best in which a certain amount of morbid material is thrown off from the bowel. I should not advocate the use of tannin unless there was some sign of hemorrhage and which could not be controlled in any other way. The use of pyoktanin has not been suggested here, but in looking over my records I have certainly found very good results from the use of this agent.

**Dr. J. H. Parkinson:** I am glad to notice that the author has emphasized the term "enteric fever," as opposed to typhoid, and I think this nomenclature should be adopted by the profession. The term typhoid is used altogether too loosely. We hear of "typhoid-pneumonia," "typho-malaria," etc The word "typhoid" is tacked on to too many things, making it difficult to decide whether a patient has had typhoid fever and pneumonia or typhoid fever and something else. A sharp distinction should be drawn, and, for this reason, the word "enteric" should be used. I do not believe in typho-malarial fever. I do believe, however, that few people in this valley can have any disease without some malarial impress; but that does not justify the differentiation of a new disease. As regards the type of fever that we have had here in times past, I think Dr. Simmons' point is well taken. I have seen cases of typhoid fever in the past few years, but it is several years since I have seen a case that was a truly typical one. I do not believe, with all possible respect to the author, that this change is altogether due to the treatment. I fully agree with the author and with Dr. Huntington, that the temperature in typhoid fever appears to be the main feature, and since I have learned that, for a number of years, commencing about 1893, I have used phenacetin with satisfaction and with advantage to my patients, though I have never reached the dosage given by the author. I have also used the coil and ice-water injections—when the temperature could not be kept down by any other means. I think the point made by Dr. Huntington, as to the size of the hose in the coil, is a good one, but I differ from him, in this, that I feel there is a limit to the application of the cold agent. I should feel amply satisfied if I could keep the temperature down to 101° but I should hesitate to push the outward application of cold, in the face of everything. As regards the question of intestinal antisepsis, I have always used antiseptics, but I have not fully made up my mind as to the best course. Regarding the condition of the bowels, my observation, of late years, has been that diarrhea is not the leading symptom I have found constipation the rule, and this I attribute to more careful feeding and to the use of antiseptics, and I have failed, so far, to see any disadvantage from that condition properly controlled. I am not prepared to advocate free catharsis which to the majority of patients is disagreeable and which is a great discomfort, causing, especially, loss of sleep at night I am anxious to learn, and further observation and experience may, perhaps, lead me to think that moderate catharsis may be beneficial At present, however, I think that an occasional free evacuation from above and a systematic evacuation by enema from below, is all that is necessary.

**Dr. Thos. Ross**: I wish to express my appreciation of the author's paper, and while it has not contained any specially new ideas, still it is a very satisfactory treatment. About twenty years ago when we were all foolish enough to subscribe for a work—Ziemssen's Cyclopedia—that cost us $125 to $150, I read therein an article on typhoid fever. I had two cases at that time and I followed the Brand treatment with them I was unceremoniously discharged, with the statement that it was an outrageous, horrible and cruel treatment. The man who succeeded me said it was barbarous treatment. That made me rather timid about using cold baths in typhoid fever. The two things to which particular attention is called are temperature and nutrition. I believe that as long as we have typhoid we will have complications. I believe that the vitality of persons and their powers of resistance differ so much, that with the best of treatment, even with the line of treatment advocated here, we will sometimes have complications. You will have the condition of the circulation, the strength of the heart, and failure of digestion and assimilation to contend with. As regards the characteristic eruption of typhoid, I believe that if we look diligently we will find eruptions in more cases than we do. In typhoid, I am not alarmed at an evening temperature of 103° F., if it be not persistent In intestinal antisepsis, calomel is as good an agent as we have.

**Dr A. M. Henderson**: When I returned to Sacramento, I learned from Dr Briggs his views with reference to phenacetin, and I must admit that I was somewhat puzzled because they were so directly opposite to the instruction to which I had been listening previously. During this last typhoid epidemic several cases came under my charge which had been under Dr. Briggs, and I naturally continued the treatment which he had institnted, and those cases did very much better than other cases which I had not treated with phenacetin. As regards the type, certainly during the epidemic I have seen the classical symptoms which have been described to me, present in some of the cases I have had one case of fatal hemorrhage I have seen the dry tongue and marked delirium,—in fact, in one case a child tried to get up and run away, at night.

**Dr. H H Look**: My observation of typhoid teaches me that the temperature is, probably, the leading feature. Second to that is the condition of the nervous system. Where I have found a high temperature connected with this it has proved a difficult case, and very often a fatal one. As some one has said, this has been a bringing out of older methods. That may be very true, but it is a new exposition of those old methods and a more rational way of looking at it. I agree with Dr. Ross, calomel, in my hands, has been the best intestinal antiseptic. I also agree with Dr. Briggs in the systematic use of phenacetin.

**Dr. D. J. Prather**: The most remarkable thing in connection with the author's paper, is the small mortality. I do not know that it is an established fact amongst the medical men of to-day that we have a solitary agent in the materia medica that has a decided modifying effect on the course of typhoid. I think that the good results in the treatment of typhoid is in the exclusion of irritants in the form of diet. I do not believe that phenacetin has a very marked effect upon the control of the temperature. If I was left to one particular agent in the treatment of typhoid fever I would select strychnine, as it has a marked effect in modifying the gastric juice. That, in connection with whisky, are two of the most valuable agents I do not believe in the use of the coal-tar preparations in typhoid fever. The speaker then gave the percentage of deaths in a series of 229 cases, reported by Osler. He said in cases where the temperature got up to 107° F. the mortality was 50 per cent.; in cases in which the temperature ranged from 104° to 105° F. the mortality was 10 per cent. Of the 229 cases reported, 122 had a temperature of 104°, 8 cases had a temperature of 106° and one had a temperature of 107°. 59 had a temperature ranging from 105° to 106° F and 85 between 104° and 105° F. Mortality and temperature: 85 had a temperature of 104-5°, with $8\frac{2}{10}$ deaths; in 59 there was a temperature of 105°, with 10 deaths, and of the eight cases with a temperature of 106° and over, there were four deaths. There is another fact brought out by Osler, that is in giving the ages in which the mortality is the greatest—between the ages of 20 and 30, when we have the greatest physical force, so that I believe the safety of the individual is in his power of resistance.

**Dr H. D'Arcy Power:** I am in accord with the author except as regards phenacetin. I have placed myself on record in the Society in the belief that whatever temperature is met with in enteric fever, its reduction is the first essential in treatment. High temperature means a burning up of the tissues of the body,—increased chemical action and destruction of the blood current. It is noteworthy that several of the gentlemen who have employed the same treatment have had a very small mortality which would seem to bring out the fact that the maintaining the status of the body is, perhaps, the main thing. We have Dr Simmons' 60 cases, with one death, and Dr Briggs' 100 cases, with two deaths. As regards Dr. Prather's remarks as to the use of strychnine, I have used it systematically for eight years, from the beginning, and my mortality has not been very high. This year I have had eight cases, two being very severe, and none of them died. One came into my hands after being treated with the Woodbridge treatment. As regards antisepsis, I used calomel This has been my treatment, with the exception of the cold water coil, for which I am indebted to Dr. Huntington, as being the first one to use it. In a word, it has been cold, strychnine, calomel, careful dieting, and whisky. As far as the question of type is concerned, I have noted, as Dr. Simmons has stated, that the average type of typhoid on this Coast and in Oregon, is not found in Europe. Some of my cases had spots, and three had diarrhea. There were no cerebral symptoms.

**Dr. H. L. Nichols:** My past experience, and what I have seen of this disease in early years in Sacramento, has led me to believe that we have had no epidemic of typhoid in Sacramento. We have had some sporadic cases, but I believe most of the cases termed typhoid, have been more particularly continued or remittent fever, of a malarial character, such as Dr. Parkinson has suggested is influenced by the malarial conditions present. True typhoid is propagated by a germ which is most frequently found in our drinking water. Occasionally it may be caused by the milk supply. In this epidemic the papers have spoken of it as something alarming. These statements were copied into our medical journals and we have got the reputation of having had a very severe visitation of typhoid fever. Many people who had contemplated visiting us, from the East, declined to come to Sacramento on account of the reported epidemic. A committee was appointed by the Board of Health of the city of Sacramento, to investigate the matter, and a most elaborate and complete report was made by that committee, to the effect that the waters of the Sacramento river contained the germs of typhoid, and therefore this disease was propagated from that source. I believe there were no tests made by the microscope to ascertain this positively Now, if that was genuine typhoid fever, and brought about by the typhoid germ, it seems to me a little strange it should not have been all over the city. I have kept account of the cases and I find that most of these cases occurred below L street, and from Second to Thirtieth streets, with a few on I street and along the lines of Twenty-ninth and Thirtieth streets. There were two or three cases reported in the vicinity of Seventeenth, between E and G, and one between Thirteenth and Fourteenth on E. I made an effort to get an account of all the cases Our epidemic of diphtheria occurred in about the same locality, last year. As to the author's paper, I could not say anything except in commendation of it, it is one which I think will prove profitable to us all. Some have spoken of its being a revival of the older methods. Very few things have been adduced in this respect, that have not, at some time in the past, been applied. My first experience with typhoid was in New England. The water treatment was not exactly like that set forth by Dr. Briggs. We used to give calomel, and that, no doubt, was the antiseptic which did good work in the bowels. We did not have ice coils then, but we used wet towels, wrung out in ice water. We did not have the ice cap either. We usually went to a butcher shop and procured a bladder and filled it with ice. It is true, the methods were not as nice as the present time. Speaking of cold applications, quite recently I took up a work of some 75 years ago, on the "Autumnal Fevers" of Savannah. In regard to the use of cold, the author said: "I have frequently used cold applications, and I frequently use ice water enematas, and I have never found any bad results to ensue from such treatment." As regards the use of phenacetin, it is an excellent antipyretic, and while I have never used it in such heroic doses as has Dr. Briggs, I have employed it with marked benefit.

Dr. Briggs, in replying, said: Dr. Huntington first called my attention to the use of the coil in enteric fever about four years ago. I believe he was the first to adopt it in this disease The results achieved by its use make it indispensable. It markedly increases the urinary secretion which, aside from the reduction of temperature, it seems to me, is the most important point in the treatment of enteric fever. I have no fear of the depressing influence of phenacetin, and those physicians who have carefully observed its action in enteric fever have had their fears largely, if not entirely, removed The low mortality of the cases forming the basis of this paper, is not to be ascribed entirely to the treatment, of course. One thousand or ten thousand cases with the same treatment might yield a quite different result. This may have been a lucky series. However. if I might go over the same series again, I believe I could reduce the mortality to 1 per cent., if not to zero. Digitalis, I believe, has no place in the therapy of enteric fever, and the two cases of death in the series occurred under its use. Neither of them had the advantage of the coil, as both occurred before I began its use. The following case illustrates what may be done by efficient refrigeration: Mr. K—— came into my hands during the fourth week of enteric fever. He had been previously under the usual expectant plan of treatment. I found him with a temperature of 101.8° in the axilla, with a pulse of 134, barely perceptible at the wrist, in a low, muttering delirium, so restless that he had to be tied in bed and watched constantly. I ordered three ice coils, one to the abdomen, one over the heart, and one to the head, and ten grains of phenacetin every two or three hours as necessary to keep the temperature below 100° F In twenty-four hours a perceptible improvement was noticed in the condition of his nervous system. In thirty-six hours the manacles were removed; he was rational, and from that time went on to rapid and full convalescence. In the depressed condition in which I found him, he bore 10 grains of phenacetin every two hours for three or four days, and every two or three hours for several days following, without the slightest evidence of cardiac dedepression, but, on the contrary, with rapid improvement in every particular. I frequently find that a mother, inexperienced in nursing, can be taught in three or four days to keep the temperature of typhoid fever below 101° throughout the entire disease, and I believe that with efficient nursing, the temperature should rarely, if ever, reach 102°, and that delirium should practically never occur The contrast between the expectant and the refrigerant plan of treatment is so marked that where two patients have been treated in the same family by these two methods respectively, it is the subject of emphatic comment in laudation of the antipyretic treatment

Dr. T. W. Huntington read a paper entitled "Some Recent Improvements in Surgical *Technique*." [Published at page 451.]

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## SAN FRANCISCO MEDICO-CHIRURGICAL SOCIETY.

*Regular Meeting, September 4, 1898.*

L. C. Lane, M.D., in the Chair.

**The Malarial Parasite.**—Dr. W. F. Cheney read a paper upon this subject demonstrating the parasite under the microscope. He said: Laveran, who discovered the parasite, was a French army surgeon in Algiers, where he had a good opportunity of seeing and examining a large number of cases of malaria. Although, for many years following Laveran's discovery, discussion was rife as to whether the parasite was really the cause of malaria, or an incident in the blood of those suffering from it, yet nearly all authorities now agree that Laveran's parasite is the cause of the disease. It differs widely from the bacteria in that it is not vegetable, but animal in its nature, and belongs to the lowest forms of protozoa. During all the eighteen years which have elapsed since its discovery, no one of the host of observers have ever seen the organism outside of the blood. We know nothing of its life outside the blood cell. Whether it lives in the air, soil, water, or decaying vegetable matter, is unknown. It has not yet been cultivated in the test tube. Neither is it known in what manner it gains entrance to the body, although from the fact that it has been found in the blood of suctorial insects, the idea that malaria may be contracted by inoculation from mosquitoes, etc., has gained a certain amount of credence. A plausibility is given to this view by the well known fact that malaria may be produced in a healthy person by infusing into his veins some blood taken from another who is suffering from malaria. The malarial parasites grow entirely within the red blood corpuscle. They begin as small, round, hyaline ameboid bodies, and as they increase in size they gradually acquire pigment which they obtain from the red blood corpuscle. Soon they break up into segments, each of which is an individual parasite, capable of entering another red blood corpuscle and of again going through the same cycle,—but no one has ever seen this particular stage of the process occur. There are now recognized three great varieties of this organism—Tertian, Quartan and Aestivo-Autumnal. The Tertian causes the tertian form of malaria—fever every third day—or quotidian, by having two groups of organisms whose life cycles are completed on alternate days. The Quartan causes the quartan form of malaria—fever every fourth day. The Quartan parasite while similar in appearance to the Tertian during its early stage, differs from it later in having fewer segments, 6 to 12 as against 12 to 20; in requiring 72 hours for its life history to be completed, as against 48 hours for the Tertian form; in being always smaller when mature, and in having coarse pigment whose movements are somewhat sluggish, as contrasted with the Tertian pigment granules whose movement is very active. The Aestivo-Autnmual is not so clearly made out nor so thoroughly understood. The parasites do not increase in a typical group, all of them at the same stage of development as in the other two varieties; but in one corpuscle the process is advanced, while in another it has just begun its growth. It is the only form which completes its growth in 24 hours. It is smaller than either of the other two and has less pigment. It causes the irregular forms of malaria, the paroxysms of which occur at various hours through the day. The organisms maturing constantly, give rise to the irregular remittent fevers About a week after the onset of Aestivo-Autumnal fever there is found in the blood "crescents" occupying the rim of a decolorized red blood cell, the coloring matter of which has been apparently transferred, and transformed into the pigment spots in the crescent. These peculiar forms are found only in Aestivo-Autumnal fever. Finally there may be seen in all three varieties certain extra corpuscular forms, which are degenerate specimens of the parasite which do not go on to reproduction. How does the malaria parasite produce the symptoms: Chill, fever and sweating? Golgi made the discovery and announcement that the paroxysms were always syncronous with segmentation of a large group of parasites; and that the breaking up of great numbers of corpuscles, and the setting free of a vast number of parasites is the signal for the chill, followed by the fever and sweating. The symptoms recur once in 48 or 72 hours because segmentation occurs at these intervals. Why should the setting free of the parasites cause fever? The explanation has been offered, that at the time of segmentation, a toxin is set free in the blood.

**Dr. Emmet Rixford**: I was surprised to hear Dr. Cheney say, a few days ago, that people in the East thought we did not have malaria here in California The fact is, very little has been written about it in the journals and I should think it would be a good field for one to work up The malarial parasite has been found here very often, at least in the San Joaquin valley, and some are of the opinion that the parasite is different from the eastern varieties. I am not sufficiently familiar with the matter to describe the difference, but there seems to be considerable evidence that there is such a difference.

**Dr. R. L. Rigdon**: It seems to me that in this, as in other work done by one not particularly expert, nothing seems easier, from description, than to take the blood specimen, find the desired objects, and make a diagnosis. But the experience which I, as a general practitioner, have had with the microscope, impresses me with the fact that it is easy to be mistaken. To refer particularly to the work before us, I should not be surprised to know that the clear spot in the corpuscles described as a parasite, is really an optical illusion, or a few spots of dirt, but I am not familiar enough with the work to decide. To refer to another branch of the subject: How does quinine destroy the parasite? If any one knows I would like to have him answer the question.

**Dr. C. F Griffin:** The suggestion made by Dr. Rixford, bearing upon Dr. Eisen's idea that the parasite of malaria in California differs from the parasite found in other regions, is new to me. It is something I have not seen in any of Dr. Eisen's publications, but it recalls a remark which I have heard Prof. Wythe make many times, that he was sure that the malarial parasite was a degenerated form of red blood corpuscle, and not a separate organism. He could not convince himself, after examining many specimens, that it was not a disease of the blood cell itself.

**Dr L C Lane:** I remember that in the search for the causal entity of malaria, J. K. Mitchell, of Philadelphia, in 1850–51, gave a discourse upon intermittent fever. He claimed that it was due to a vegetable organism, microscopic in size, which he named the cryptogamous fungus This was really the foundation of this great work; which, profiting by improved instruments, and improved *technique*, has been brought to the point at which we find it to-day. Still, it is best not to be too sure I remember, between 1860–70, Salisbury announced the finding of the causal agency or causal palmella. It was not received with much favor, although the result of his work was published, both in this country and in Europe. Dr. H. W. Harkness, then of Sacramento, told me he had made a series of experiments, about 30 years ago, at Sacramento, and his reports did not confirm Salisbury's theory. Later, Klebs and Tommassi Crudelli found what they were sure was the cause of malaria, and now, lastly, we have Laveran, the Frenchman, with his discovery. I look to the twentieth century for some other cause of malaria.

**Dr. E. Pring:** I would like to ask Dr. Cheney if he would be kind enough to tell us how his slides were prepared.

**Dr. Cheney**, in replying, said: As Dr. Rigdon says, there is always danger of mistaking spots or vacuoles in the red blood cells for the malarial parasite, but these can usually be eliminated by careful focussing, and especially by experience in examination. Specks of dust are never found in the red blood corpuscle, but are scattered about in the plasma, and are never found with a definite arrangement like the pigment in the malarial parasite. Another point is, that in fresh blood the pigment is dancing and in constant motion, while specks of dust never are. It is not definitely known how quinine destroys the malarial parasite. Welch, of Johns-Hopkins, claims that this work of destroying the parasites is done by the leucocytes. But whether quinine stimulates the leucocytes to greater activity, or directly kills the parasite, is unknown. In regard to Dr. Griffin's remark about Prof. Wythe believing the parasites to be simply degenerated blood cells, we cannot prove that they are not, but in no other condition do we find such a degeneration taking place in the red blood corpuscle. On the other hand, the presence of the parasite and the cycle of its development accounts for all the symptoms of the disease—ordinary degenerations do not go through such a definite cycle. With reference to what Dr. Lane says, we cannot be absolutely certain about the parasite being the cause until we are able to comply with Koch's three laws As to the preparation of the stained specimens here exhibited, a very small drop of blood is obtained, preferably from the lobe of the ear, on a cover slip Another slip is placed upon it and the two are drawn apart. They are put aside to dry, and then allowed to remain in a mixture of equal parts of alcohol and ether, for from 4 to 24 hours, to harden. They are then removed, stained with eosin, and then with methylene blue. The red cells are pink, the parasite blue. They are then washed, dried, and mounted in Canada balsam.

# MEDICAL NEWS.

## LICENTIATES OF THE BOARD OF EXAMINERS.

At a meeting of the Board of Examiners, held October 4, 1898, the following were granted certificates to practice medicine in this State:

Mary Bird Bowers, San Francisco; Coll. Phys. and Surg., San Francisco, Cal., July 14,'98.
John McCarty Brooke, Portland, Or.; Coll. Phys. and Surg., N. Y., June 10,'91.
J. Edward Cox, Claremont, W. Va.; Med. Coll. of Virginia, April 2,'95.
Edward M. Fly, National City; Jefferson Med. Coll., Pa., May 9,'94.
Iris W. January, Weaverville; St. Louis Coll. Phys. and Surg., Mo., March 10,'91.
Herbert A. Johnston, Anaheim; Coll. of Med., Univ. Southern Cal., June 2,'68.
Silas F. Johnson, Los Angeles; Coll. Med., Univ. Southern Cal., June 1,'94.
Nat King, El Paso, Texas; Louisville Med. Coll., Ky., March 2,'93.
Hugo A. Levison, San Francisco; Coll. Phys. and Surg., N. Y., June 10,'96.
Thos. L. Price, San Francisco; Medico-Chirurg. Coll., Pa., May 12,'97.
John W. Shields, San Francisco; Royal Coll. Phys. and Royal Coll. Surg., Edinburgh, Scotland, Jan. 28,'95; Fac. Phys. and Surg., Glasgow, Scotland, Jan. 28,'95.
Joseph A. Silverman, San Francisco; Med. Coll. of Ohio, April 5,'94.
John L. Stump, San Francisco; Med. Coll. of Virginia, March 30,'88.
Thos. F. Taylor, Jr., Davisville, Bellevue Hosp. Med. Coll., N. Y., March 1,'80.
Francis H. Thibodo, Green Bay, Wis.; Univ. Queens Coll., Ont., Canada, Sept. 30,'95.
Geo. P. Waller, Bloomsburg, Pa.; Jefferson Med. Coll., Pa., March 10,'77
Joseph W. Warbinton, Pueblo, Colo.; Beaumont Hosp. Med. Coll., Mo., March 31,'92.

CHAS. C. WADSWORTH, Secretary.

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### Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the U. S. Army (Division of the Pacific) from September 20, 1898, to October 20, 1898.

Acting Assistant Surgeon John F. Minor will, in addition to his present duties, report to Captain Henry C. Danes, 3d Artillery, Mustering Officer, to make physical examinations of such enlisted men of the 6th California Volunteer Infantry as may elect to take their discharge before furlough. Par. 3, S. O. 138, Dept. of Cal., Sept. 21, 1898

Leave of absence for twelve days is granted Assistant Surgeon W. M. Van Patten, 1st Washington Volunteer Infantry. Par. 4, S. O. 140, Dept. of Cal., Sept. 24, 1898.

Assistant Surgeon E. M. Brown, 1st Washington Volunteer Infantry, now on duty at the Presidio of San Francisco, will proceed to Angel Island, California, reporting upon arrival to the commanding officer for temporary duty at that post during the absence of Assistant Surgeon W. M. Van Patten. Par. 5, S. O. 140, Dept. of Cal., Sept. 24, 1898.

Leave of absence for twenty days is granted Captain Percy L. Jones, Assistant Surgeon, 1st Tennessee Volunteer Infantry. Par. 1, S. O. 149, Dept. of Cal., Oct. 5, 1898.

Upon the recommendation of the Chief Surgeon, Acting Assistant Surgeon Bruce Ffoulkes, now in San Francisco, is assigned to duty at the Division Field Hospital, the Presidio of San Francisco, California. Par. 5, S. O. 154, Dept. of Cal., Oct. 11, 1898.

Upon the recommendation of the Chief Surgeon, Acting Assistant Surgeon Ira B. Ladd, now in San Francisco, is assigned to duty with the 3d Battalion, 23d Infantry, en route to Manila, P. I. Par. 3, S. O. 155, Dept. of Cal., Oct. 12, 1898.

The following designated officers will proceed to the Philippine Islands on the transport Senator, and will be in readiness to embark on that steamer when notified from these headquarters: Acting Assistant Surgeons Ira B. Ladd, C. J. Bartlett and Bruce Ffoulkes. Par. 6, S. O. 155, Dept. of Cal., Oct. 12, 1898.

Upon the recommendation of the Chief Surgeon, Acting Assistant Surgeons Shadworth O. Beasley and A. H. Giannini, now in San Francisco, are assigned to duty at the Division Field Hospital, the Presidio of San Francisco, California. Par. 4, S. O. 156, Dept. of Cal., Oct 13, 1898.

The following designated officers will proceed to the Philippine Islands on the transport Valencia, and will be in readiness to embark on that steamer when notified from these headquarters: Assistant Surgeon W. M. Van Patten, 1st Washington Volunteer Infantry, and Acting Assistant Surgeons William O. Taylor and Shadworth O. Beasley. Par. 5, S. O. 157, Dept. of Cal., Oct. 14, 1898.

Acting Assistant Surgeon Edward C. Webb is relieved from duty at Angel Island and assigned to duty at the artillery camp near Fort Winfield Scott, California, relieving Acting Assistant Surgeon John F. Minor. Acting Assistant Surgeon Minor, upon being so relieved, will proceed to Angel Island for duty at that post. Par. 2, S. O. 158, Dept. of Cal., Oct. 15, 1898.

Upon the recommendation of the Chief Surgeon, Acting Assistant Surgeon W. Hoepfner Winterberg, Alcatraz Island, California, will, in addition to his other duties, report on three days of each week to the recruiting officer in San Francisco to examine recruits. Par. 5, S. O. 162, Dept of Cal., Oct. 20, 1898.